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THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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Plymouth. Royal Parade, which is bisected by Armada Way. On the left, St Andrew's Church and partly ruined Guildhall

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Architect: Victor Bain, F.R.I.B.A.

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THE JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

THIRD SERIES VOLUME SIXTY-ONE NUMBER SIX TWO SHILLINGS AND SIXPENCE
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APRIL 1954

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R.I.B.A. Conditions of Engagement and Scale of Professional Charges

The Council have completed their review of the comments received from the general body of members on the draft Conditions of Engagement and Scale of Professional Charges, published in the JOURNAL for December 1953. A number of substantial alterations have been made to the draft resulting from these comments, and the Conditions and Scale as finally approved by the Council are published in this issue of the JOURNAL. The attention of members is drawn to the revised Scale which will come into force on 1 June 1954. The revised edition of the booklet setting out the Scale will be available from 1 May onwards, price 6*d*.

The Practice Committee wish to stress the importance of bringing the Conditions of Engagement and Scale of Professional Charges to the notice of Clients at the time of appointment so that there is a clear understanding as to the amount of the fees payable and the times of payment.

In particular it should be noted that, under the provisions of Clause B.2 of the Scale, the appropriate charge is essentially a matter for prior written agreement between Client and Architect.

The Conference

Judging by the number who have so far applied for membership, this year's conference at Torquay (26 to 29 May) promises to be as successful as its predecessors. We are asked to say that the tickets for the garden party at Torre Abbey, given by the Mayor and Corporation, have to be strictly limited in number; they will be issued to members in order of application. Those who are late in applying may not be able to attend this function.

The authors of the Conference papers, Mr. E. D. Mills [*F*] and Mr. W. A. Allen [*A*], point out that the usefulness of the meetings will depend especially on the discussion. No paper with such a wide field as 'Materials and Techniques' can do more than provide the basis for a forum; it is the contributed experience of members which will make the meetings a success. The authors therefore particularly invite members to come prepared to discuss their experience, and should they desire to use two or three slides which they cannot conveniently get made themselves they may send their illustrations to Mr. Allen at the R.I.B.A. and he will have them made and bring them to Torquay.

Mr. J. A. Coia, A.R.S.A.

Mr. J. A. Coia [*F*] has been elected an Associate of the Royal Scottish Academy.

British Architectural Guild

At their meeting on 6 April the Council of the Royal Institute of British Architects considered the documents submitted by the British Architectural Guild.

The Council decided that, irrespective of the result of the R.I.B.A. questionnaire on representation of members in salaried employment, they are not prepared to support the British Architectural Guild. Members and Students are advised accordingly.

The views of the Council on the representation of members in salaried employment will be announced when the analysis of the results of the R.I.B.A. questionnaire has been considered.

R.I.B.A. Architecture Bronze Medal: The Wessex Federal Society of Architects

The Jury convened by the Wessex Federal Society of Architects have awarded the R.I.B.A. Architecture Bronze Medal for the three years ending 31 December 1953 in favour of the Church of St. Francis of Assisi, Ashton Gate, Bristol, designed by Mr. Robert J. Potter [*F*] and Mr. R. W. Hare [*A*].

Report on Modern American Factory Design

An informal, detailed Report of his study of American factory design has been prepared by Mr. W. A. Allen [*A*] of the Building Research Station, and copies are now obtainable.

It will be recalled that Mr. Allen read a paper on this subject to the Institute last year and agreed then to make his Report available as soon as it could be completed and printed. The Report covers planning, structure, services and indoor climate. Those who wish to have copies should write to the Director, the Building Research Station, Watford, Herts. Single copies are free; additional copies will be charged at 2*s*. 6*d*. each.

The Work of the Imperial War Graves Commission

The Imperial War Graves Commission, whose work we illustrated towards the end of last year, are publishing the first volume of a series of books illustrating Commonwealth War Cemeteries. The Commission think that the relatives of those who are commemorated in the cemeteries and memorials may like to purchase copies. The first volume covers cemeteries and memorials in England, France, the Netherlands, Belgium and Italy erected after both wars, and consists of numerous beautiful photographs and an introduction by Edmund Blunden. Copies are 15*s*. net, postage 1*s*. 6*d*., and are obtainable from the Imperial War Graves Commission, Wooburn House, Wooburn Green, Bucks.

The Brixton School of Building

The oldest school of building in Britain, the Brixton School of Building, celebrates its golden jubilee this year. Starting as evening classes in an old public baths, it has been twice enlarged and rebuilt and supplemented by two large annexes. Since 1904, 30,000 students have passed through its classes and its annual intake is now 3,000.

The Principal, Mr. D. A. G. Reid, wishes to get in touch with as many old students as possible in order to send them details of the Jubilee celebrations. Included in the celebrations, which will take place in November, are an exhibition entitled 'Fifty Years of Building Education' to be opened by Sir David Eccles, Minister of Works, at the Building Centre, a dinner on 12 November, a prize distribution and social functions.

Architectural Photography Competition for the Edinburgh Festival

The Associate and Student section of the Edinburgh Architectural Association are promoting an open competition of architectural photography for an exhibition to be held at the rooms of the R.I.A.S., 15 Rutland Square, Edinburgh, during this year's Edinburgh Festival. Prizes are £20, £7 and £3 and anyone can submit photographs. They will be judged according to 'architectural interest and photographic merit', the former being given a wide interpretation. The help of three Scottish members of the Royal Photographic Society has been promised in the judging. The closing date is 1 July. Entry forms may be obtained from the Exhibition Secretary, 15 Rutland Square, Edinburgh, and there is an entry fee of 5*s*. for which sum any number of photographs may be submitted by any one person. If the exhibition makes a profit, the whole of this will be given to the Architects' Benevolent Society.

The Architecture Club

A supper of the Architecture Club was held at Chez Auguste, Soho, on Wednesday 17 March, under the Chairmanship of the President, Viscount Esher, M.B.E. [*Hon. F*], followed by a discussion on 'What has happened to Post-war Planning?' The discussion was opened by Sir Patrick Abercrombie, F.S.A., M.T.P.I. [*F*], and the President, and was continued by Mr. G. A. Jellicoe, M.T.P.I. [*F*], Mr. W. G. Fiske, Mr. A. S. G. Butler [*F*], Sir George Pepler [*Hon. A*], Mr. L. Sylvester Sullivan [*F*], Dr. Thomas Sharp, C.B.E., P.P.T.P.I. [*L*], Mr. Gerald Wilson, Mr. Peter Shepheard, A.M.T.P.I. [*A*] and the Hon. Lionel Brett [*F*].

Rochester Cathedral

An exhibition is to be held from 17 May to 5 June in the crypt of Rochester Cathedral in connection with the celebration of the 1,350th anniversary of the cathedral. This is to display exhibits from every cathedral in England and is expected to be a unique display of cathedral architecture and art.

The cathedral appeal fund has now reached £40,000 but a further £20,000 is needed and the Dean and Chapter would welcome donations, large or small.

The Bath Assembly

The theme for this year's Bath Assembly is 'John Wood and his Times', this year being the bicentenary of John Wood's death. The Bath Group of Architects of the Bristol and Somerset Society of Architects have been asked to arrange a lecture and exhibition. The lecture, on 'John Wood and English Architecture', is to be delivered by Mr. John Summerson, F.S.A. [*A*], on 24 May at 3 p.m. in the Banqueting Room of the Guildhall, Bath. The exhibition is to be at the Octagon, Milsom Street, from 15 May (2 p.m. to 8 p.m.) until 29 May (weekdays 11 a.m. to 8 p.m.). The Bath Group of Architects hope that members who may be passing through Bath *en route* to the Conference at Torquay will visit the exhibition.

The Venetian Villas Exhibition

If numbers are a guide, no post-war exhibition at the R.I.B.A. has been so successful as the recent one on Venetian Villas; more than 4,000 people came to see it. The Press interest has also been unprecedented. THE TIMES, COUNTRY LIFE, THE ILLUSTRATED LONDON NEWS and THE ARCHITECTURAL REVIEW published excellent illustrated articles and there was a great number of lesser notices. The B.B.C. gave the exhibition a showing on television.

Franco-British Union of Architects

A luncheon was held at University College, London, on 12 March, by the Franco-British Union of Architects in honour of M. Paul Tournon, Architecte en Chef des Bâtiments Civils et Palais Nationaux, who was visiting London to deliver two lectures on 'Modern French Architecture' at the College.

Preparations are being made for the Annual Meeting to be held in Exeter from 23 to 26 May. The provisional programme is:—*23 May:* French Members arrive at Southampton. Drive by coach to Exeter, visiting Salisbury, Stonehenge and Sherborne. *24 May:* Coach excursion from Exeter to Barnstaple, Bideford, Clovelly, Bude, Tintagel and Tavistock. *25 May:* Coach excursion from Exeter to Buckfastleigh, Plymouth, Totnes and Saltram House. Evening—Official Meeting and Dinner. *26 May:* French members return to Southampton via Bridport and Dorchester.

York Summer Schools

The sixth annual Summer School for Architectural Students at York is to be held from 31 July to 14 August. It enables students to make measured drawings under the guidance of tutors and also includes lectures by well-known architects and historians. The inclusive fee is £14. Application must be made by 28 June, but those intending to join should apply early.

A Summer School for laymen on the History of English Architecture is to be held from 14 to 21 August. This has been arranged in response to numerous requests. The fee is 8 guineas. Application must be made by 6 July.

A course on Public Park and Garden Design is to be held from 6 to 11 September and a specialised course on Timberwork and Roof Repairs from 13 to 18 September.

All inquiries should be addressed to the Secretary, St. Anthony's Hall, York. The courses are under the supervision of the Director, Dr. W. A. Singleton, M.A., B.Arch. [*A*].

Joint Activities of West Country Schools of Architecture

Since the early 1930's the Royal West of England Academy School of Architecture, Bristol, and the Cardiff School of Architecture have had exchange visits every year for an annual rugger match and hospitality centring round an exhibition of school work. Recently this exchange has been extended to the Birmingham School of Architecture. The first visit was of Birmingham to Bristol on 2 December 1953 and was followed by a return visit of Bristol to Birmingham on 3 March 1954. On the visit to Bristol, the R.W.A. School won the rugger match by 11 points to 3 after a keen game. At the return match the Birmingham School avenged the defeat by the same score. In each case a large studio was converted to serve a gigantic lunch and there was also an exhibition of school work, an informal discussion and a dance.

R.I.B.A. Diary

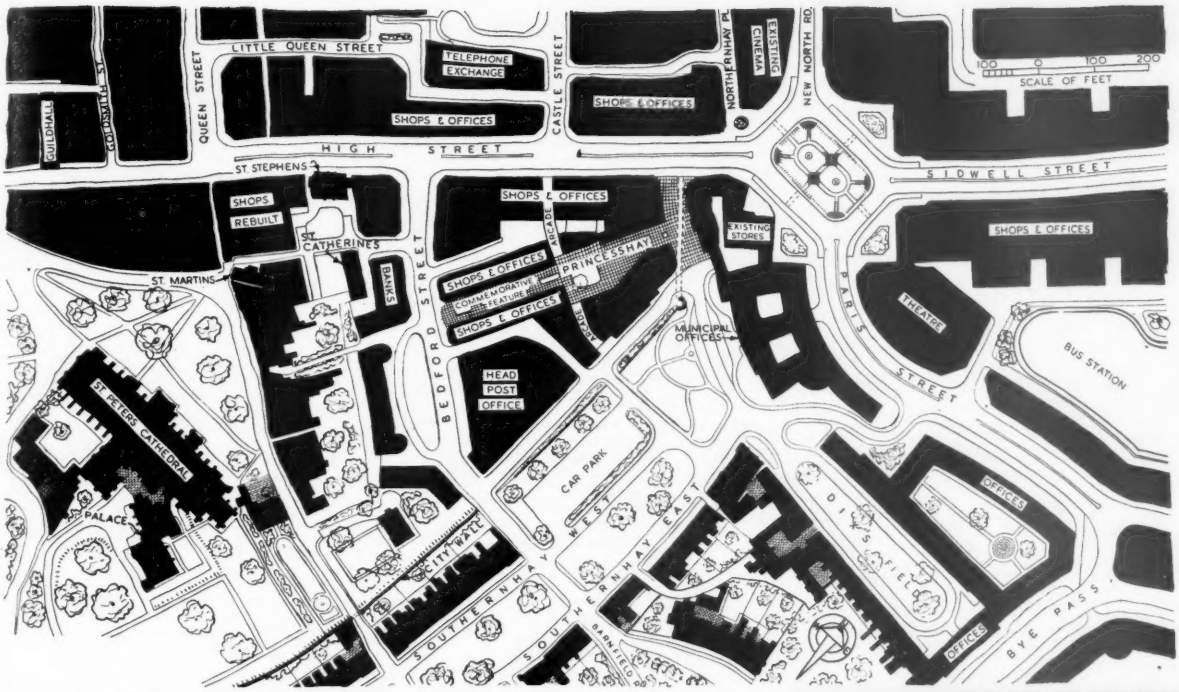
TUESDAY 4 MAY. 6 P.M. Annual General Meeting.

MONDAY 10 MAY. 6 P.M. Library Group Meeting. Identification of unknown drawings in the possession of the Library.

TUESDAY 18 MAY. 6 P.M. *Architectural Criticism*—Ian Leslie [*Hon. A*] and Ian McCallum [*A*].

WEDNESDAY 26 MAY–SATURDAY 29 MAY. British Architects' Conference, Torquay.

THURSDAY 20 MAY–FRIDAY 4 JUNE. Exhibition of Polish Architecture. Mon.–Fri. 10 a.m.–7 p.m., Sat. 10 a.m.–5 p.m.



Exeter. Key plan of the redeveloped area east of the cathedral

Exeter and Plymouth Renewed

Some Notes by the Editor on a Recent Visit

WHEN I LAST VISITED Exeter and Plymouth the centres of both cities were smoking ruins. A war-time job of civil defence research included the grimly fascinating duty of making such visits as soon as possible after raids. I retain from those visits mental pictures of gutted interiors, tottering walls, firemen 'damping down' smoking débris and of rescue parties patiently and quietly digging out the dead and the still living. The crackling of glass under feet and tyres, the eddies of wind-blown dust and fire ash, the pathetic silence of shattered and deserted buildings littered with their owners' disordered possessions—these made up the atmosphere in which one studied the effects of bombing. Recollections of this or that street, church, cinema, shop or group of houses in their ruined or semi-ruined state were still vividly in my mind when, early in March, I revisited Exeter and Plymouth.

Almost invariably it was the centre of a city which suffered most—that conglomeration of buildings closely grouped in blocks, delimited by a medieval street plan. The buildings were of all periods and most had been altered many times; a colleague once identified brickwork of seven periods—from Roman to fletton—in the ruins of a shop in Norwich. Commerce had done its worst with them.

The power to wander at will through the burnt and blasted buildings of these urban centres gave one an appreciation of their inward quality, or lack of quality, which is quite unobtainable in peace time. This quality is but rarely appreciated by the inhabitants and not at all by the casual wayfarer passing down the street. Under post-blitz conditions one saw them for what they really were. Here and there one regretted the loss of an elegant or noble building—a church, an inn or a Georgian terrace—but any architect, with his ingrained belief in sound planning, good construction and pleasing design, could not fail to be glad that the beneficent bomber had swept away so much bad building together with the little that was good. The bomber brought temporary tragedy and loss, but it left a long-term legacy of useful destruction and the chance to build better.

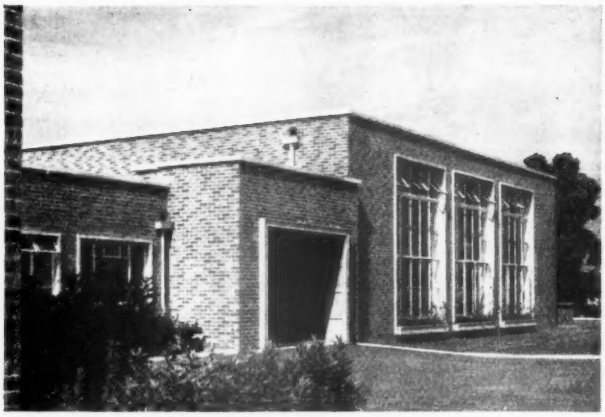
This view was not held by the majority of inhabitants who, being British, had a sentimental attachment to things that are old and familiar. One can understand the urgency of the desire, against which town planners have had to fight so hard, to put things back as they were, even to replace original half-timbering with a modern fake. But common sense and the planners prevailed and the government, by conferring compulsory purchase powers on the municipalities, ensured that streets would be realigned and the welter of small freehold properties regrouped into larger leasehold sites.

My second visit to Plymouth and Exeter held a promise. I was to see what the

Exeter. The entrance and common room of Toronto House, an old people's home

authorities were putting in the place of the huddle of poor quality building I had seen in ruins. Development plans had been published. The Plymouth plan by Sir Patrick Abercrombie and Mr. J. Paton Watson, the city engineer, and 'Exeter Phoenix' by Dr. Thomas Sharp had been assessed by the professional critics and argued over by the inhabitants. They had been accepted in principle by both the civic authorities and the government. But these distinguished planners, when they made their plans, had not been able to envisage twelve years of austerity, shortages, restric-

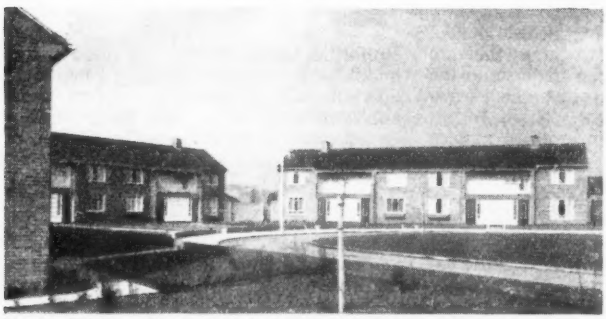
[*continued on page* 214



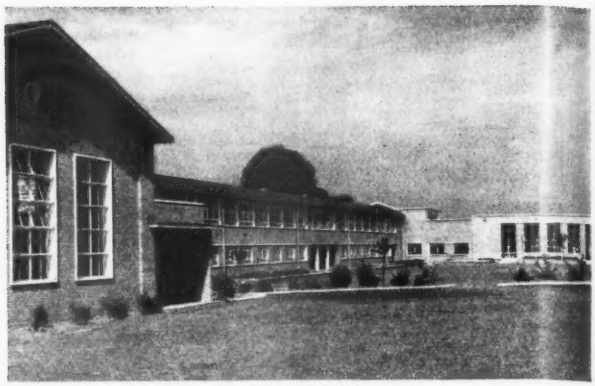
Exeter. Countess Wear Infants' School

Exeter. Stoke Hill Housing Estate. Three-bedroom terrace houses

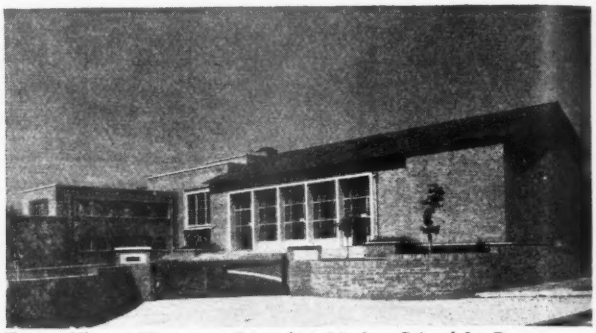
Exeter. Countess Wear Housing Estate



Exeter. Whipton Barton South. Two-bedroom flats. Photos on this page are of work by the City Architect, Harold B. Rowe [*F*] and his staff

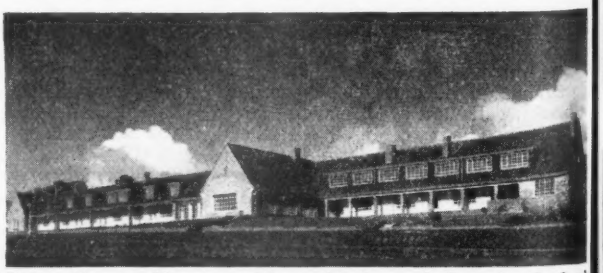


Exeter. Priory Secondary Modern School for Girls

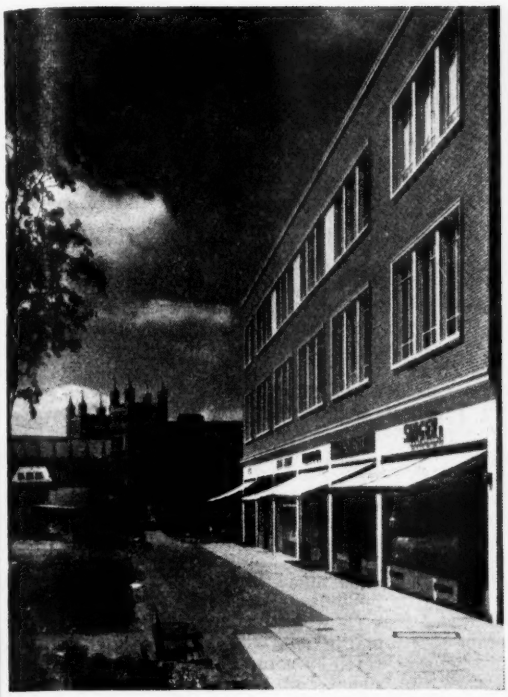


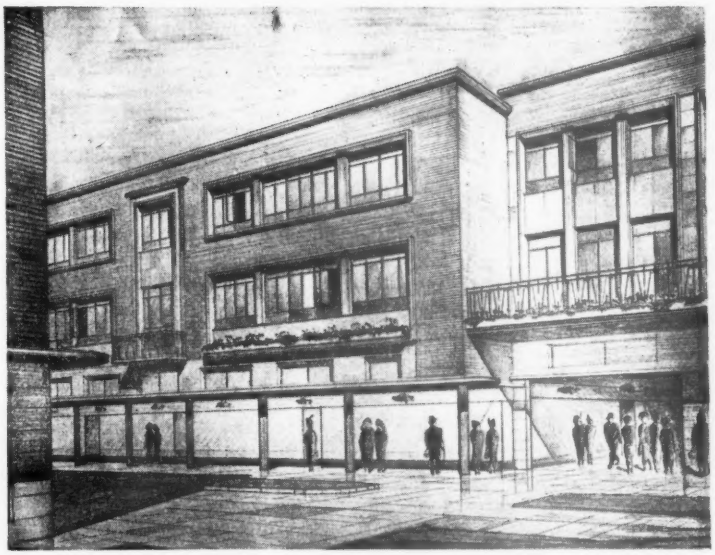
Exeter. Vincent Thompson Secondary Modern School for Boys

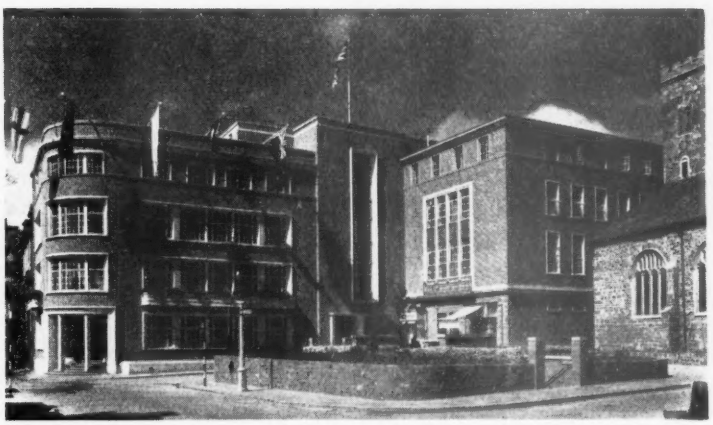
Exeter. Countess Wear Estate. Shops and maisonettes



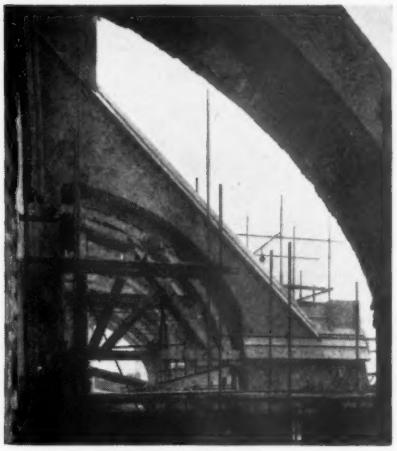
Exeter. Toronto House, an old people's home, built under the Lord Mayor of London's National Air Raid Distress Fund

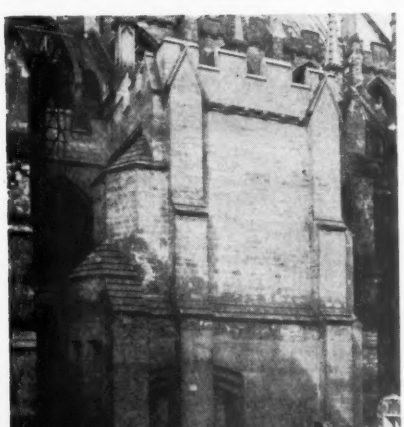






Exeter. Some new buildings in the area west of the cathedral. Above: Part of Princesshay, a pedestrian shopping precinct; Architects, L. H. Fewster and Partners [*L/F/L*]. Top right: New buildings in the High Street, the two on the right by Lucas, Roberts and Brown [*FF*] and the next, Lloyds Bank, by E. Victor Beer [*F*]. Middle right: perspective of a block in Princesshay pedestrian shopping precinct; Architect, Harold B. Rowe [*F*], City Architect. Bottom right: a small square in Catherine Street; the restored St. Stephen's church on the right; left, part of Colson's store and restaurant; Architects, F. W. Beech and E. Curnow Cooke [*F/L*]. Below: a group of shops and offices in the High Street; Architects, L. H. Fewster and Partners [*L/F/L*]





Bomb damage repairs to Exeter Cathedral. Two new flying buttresses, vaulting and the rebuilt chapel. Architect, H. M. Drury [*F*], Surveyor to the Dean and Chapter

tion of capital expenditure and soaring building costs. One knew also how an original fine planning conception can become whittled down by afterthoughts, conservatism of mind, changes of policy and shortage of money.

On the other hand, second thoughts may lead to improvements. Prolonged study by municipal officers of a piece of street layout or a group of buildings may produce ideas that are better, more workable or—most important to the municipality—more economical than the first ideas of the planners.

One factor which has certainly influenced the rebuilding of Plymouth and Exeter, and doubtless of most blitzed cities, has been the need to restore rateable values as soon as possible. The central commercial areas of a city are the most highly rated; their destruction meant a severe drop in the municipal revenue (in the case of Plymouth as much as 20 per cent); hence the need in a time of steeply-rising municipal wage bills to restore that revenue, or even to increase it. A contributory factor in a recent rate reduction in Exeter has been the increased rateable value arising from the rebuilding of the central areas.

Some things have been lost as well as some gained by the system of compulsory purchase and reallotment of sites. Before their destruction, the central areas of Plymouth and Exeter were a collection of freeholds of irregular size and shape, resulting in the jumble of building I have described. These freeholds were mostly owned by local people, the principal exceptions being the properties of banks and chain stores. Many quite small shops were freehold or let at low rentals. By and large the townsfolk owned the land and local names appeared on the shop fascias.

The policy of compulsory purchase and reallotment has brought in the national financial corporations who have taken up many of the new large sites and erected buildings on them, letting off shop and office space. Much of the land has therefore passed to bodies which are not local and whose stake in the life of the city is purely a financial one. Whether this change is good for the life of the city remains to be seen. One disadvantage is that the small shopkeeper or commercial business has either been squeezed out of the city centre or has been forced to pay higher rents than before. There is indeed a risk that these redeveloped city centres may become a conglomeration of chain stores and the offices of national bodies, such as government departments, which can afford the higher rents. Much has been gained by this method of redevelopment, but some things have been lost.

These outside financial concerns have, in some instances, had their buildings designed by London architects who are experienced in large commercial buildings. This again has advantages and disadvantages. The buildings are efficient and well designed, but they have little local character; many of them might well be in the heart of any city. There is something of a feeling among the townsfolk and the local architects that the heart of their city has passed out of their control. Regionalism has taken a bad knock.

It is hard to say whether there was a possible alternative. The formation of joint redevelopment companies by the original freeholders has been tried in some blitzed cities, but these have suffered from a lack of capital with which to erect the necessarily larger buildings, the extents and heights of which are prescribed under town planning, and with present building costs.

It was with these thoughts in mind that I went to look at Exeter and Plymouth. I arrived in Exeter late in the evening and went first to look at the large devastated area north-east of the cathedral (see the plan). Exeter had suffered two severe conflagrations which had been prevented from coalescing only by skilful and courageous fire-fighting. The High Street traverses the two areas, leaving in the middle a few hundred yards of undamaged properties, including the ancient Guildhall.

As the High Street enters the larger, eastern, area it now widens to a handsome open street lined with large commercial buildings. These are of a pleasant warm brick with stone dressings, soberly designed and in scale with the city. Design has been carefully controlled (there are no hanging signs) and one gains an impression of extensive airy shops and well-lit offices. Inevitably there is a sameness about the buildings which have been erected so far, but this may be lessened when public buildings come to be built. The narrow, cosy, traffic-congested medieval streets have gone and there is room to move and to park cars. A purely personal impression was that the planning and buildings were sane and orderly, if unexciting.

An interesting feature of this layout is an attempt to develop a 40-ft. wide pedestrian shopping precinct—Princesshay. This feature of Dr. Thomas Sharp's scheme gives a terminal vista of the Cathedral towers. The City Architect, Mr. H. B. Rowe [*F*], said that shopkeepers are apprehensive of pedestrian shopping precincts, fearing they may become unfrequented backwaters, however logical they appear to planners. A part only of the precinct has been built so far, but a group of temporary shops, with pedestrian access, has been built on a portion of the site, and these seem to be attracting their share of custom. An arcade leading from Princesshay and bisecting the High Street is also serving as an introduction to pedestrian shopping. It seems likely that Princesshay, when it is completed, will be a commercial success.

Much of the western blitzed area still remains undeveloped, though one good commercial building has been finished and others are under construction. It is too early to venture an opinion on this area.

Both Exeter and Plymouth have had the post-war problem, common to all cities, of housing, schools and the development of industrial groupings. At Exeter two neighbourhood units, Countess Wear Estate and Stoke Hill Estate and two industrial areas have been developed and are now largely

Plymouth. New George Street. Shops by de Metz and Birks [*FF*], P. V. Burnett and Partners [*F/AA*] and Taylor and Bracken [*F*]

Plymouth. Department store; Architects, Sir John Burnet, Tait and Partners [*FF*]

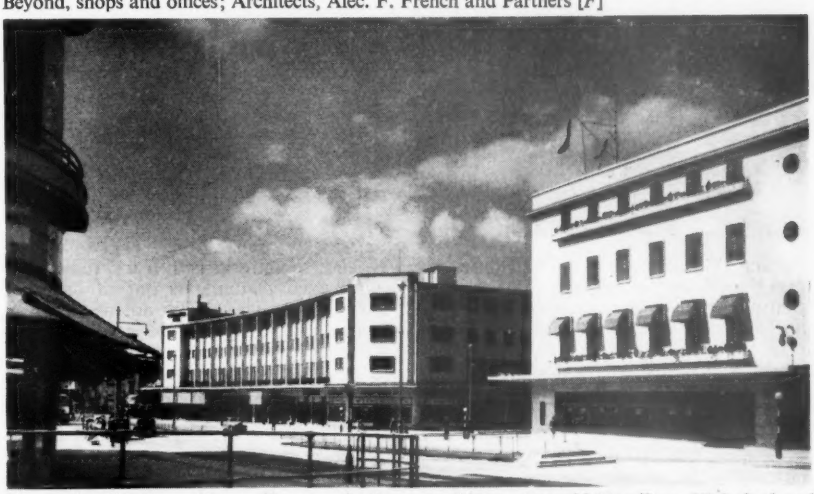
built up. The illustrations do not adequately reveal the high quality of the housing which, apart from its skilful planning, is notable for good colour and proportions. The quality of a housing scheme is notoriously difficult to convey on the printed page and the Exeter work is no exception. Most of the development is in two storeys, mostly houses, but with some two-storey flats and three-storey flats and shops. The city has 75,000 inhabitants and plenty of land—though much of it is hilly—around it, so that there is no pressure towards tall flat blocks, as is the case with many larger cities.

A look at the cathedral revealed that the south choir aisle, hit by a large bomb, has been repaired. When I saw this after the 1942 blitz two of the great flying buttresses supporting the choir vault had been destroyed, a small chapel and three bays of the choir aisle were a great tumbled heap of masonry; unsupported sections of vaulting hung tenuously in mid-air. Remedial work was undertaken by Mr. Godfrey Allen [*F*], Surveyor of St. Paul's Cathedral, and continued by Mr. H. M. Drury [*F*], Surveyor to the Dean and Chapter of Exeter Cathedral, after his return from the army in 1945. It was finished last year. The flying buttresses were first reconstructed, then the vaulting of the three choir aisles and finally the chapel. This last is a three-storey building with a crypt under, housing the organ blowing apparatus and a muniment room over.

Plymouth is a different and much larger story. Altogether it received 59 raids, including a heavy three-day blitz in 1941 which destroyed practically the whole of the commercial centre and gutted the Guildhall and the great church of St. Andrew. The subsidiary shopping centre at Fore Street, Devonport, was also destroyed. Indeed I had seen it still burning a few hours after the enemy bombers had left. I had interviewed the city engineer, Mr. J. Paton Watson, in a small intact building near the central devastated area. On my second visit I interviewed him again.

He and the City Architect, Mr. H. J. W.

Plymouth, Royal Parade. Left, Plymouth Co-operative Society; Architect, W. J. Reed [*F*]. Beyond, shops and offices; Architects, Alec. F. French and Partners [*F*]

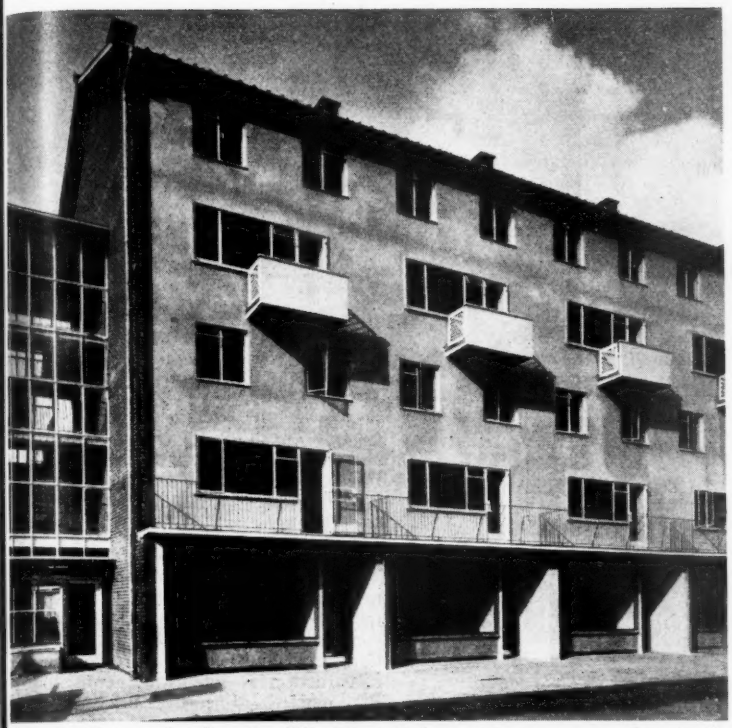


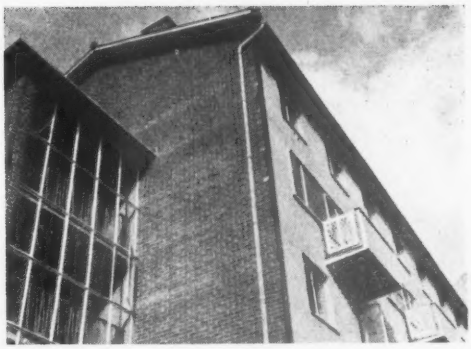
Plymouth. Old Town Street. Shops and offices; Architects, Donald Hamilton, Wakeford and Partners [*L/F*]; and, right, shop of Boots Pure Drug Co. Ltd.; C. St. Clair Oakes [*F*], Staff Architect

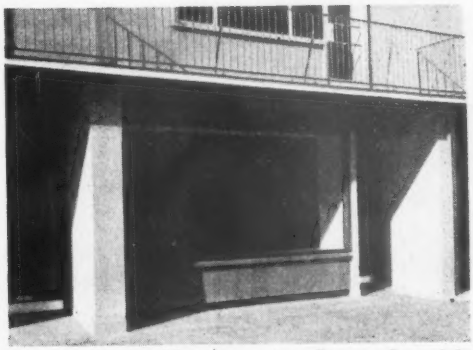
Plymouth. Star flats in Cecil Street, typical of higher density inner development. The structures are of high-strength brickwork allowing 11-in. external walls on all four storeys. The average cost per flat was £1,345. City Architect, H. J. W. Stirling [*A*]; Deputy City Architect, F. Napp, A.A.Dipl., A.M.T.P.I. [*A*]; Chief Architect, A. C. H. Harris [*A*]; Principal Assistant Architect Housing, D. Hunt [*A*]; Assistant Architects, G. E. J. Gissing [*A*] and R. P. H. Gurling [*A*]

Stirling [*A*], had much to tell and show me, and there were the beginnings of the new central layout to be seen, enough to give an idea of its final form. The spine of the plan for the central area, by Sir Patrick Abercrombie and Mr. Paton Watson, is Armada Way—a great boulevard 150 ft. wide stretching from the main railway station on the north, traversing the devastated area and terminating in the tall war memorial on the Hoe. Because this street bisects the central area, a more or less axial layout resulted. This seems to have evoked some criticism from those who think axial planning is out of date and indeed the site levels are not wholly in its favour. But there can be no doubt that Armada Way will be a centre piece or focus to the whole city, bringing order and dignity into what was once an amorphous conglomeration of streets and buildings. At present only a short length of Armada Way has been made, but most of its length is cleared of building and one can see easily how it will fall from the station towards the south, level out in the centre and then rise to the lesser height of the Hoe. Vistas are perhaps out of fashion just now, but anyone who has admired the New Town in Edinburgh will find some of its qualities here, though on a larger and more modern scale.

The cover picture of this JOURNAL shows the first two completed streets, Royal Parade, with roundabouts at each end, and New George Street. They are bisected by Armada Way. On the left is the re-roofed Church of St. Andrew and the Guildhall, which so far has been partly restored. The







Plymouth. Shops and maisonettes, King Street. Staircase entrances serve maisonettes by balcony access. Load-bearing party walls carry floor slabs and r.c. beams carry the front and back walls. Assistant Architects, Miss M. E. P. Driver [*A*] and G. Green [*A*]

Plymouth. Two-bedroom terrace houses. Two views showing treatment on part sloping, part flat site. Dwellings per acre, 12·87. Average cost per house £1,168

City Architect has prepared a scheme for modernising the public hall.

Under control of elevations it has been decided that the buildings in the Royal Parade—George Street area shall be faced with Portland stone. Whether this decision was wise on grounds both of suitability in a predominantly grey-coloured city and of cost (with its effect on rents) has been much debated. But it has given a definitely 'city' character and scale to what since the uniting of Plymouth, Stonehouse and Devonport in 1914 into the County Borough of Plymouth, is the principal city of the south-west. On that account there is much to be said for the use of Portland stone. A bank building by W. Curtis Green, R.A., Son and Lloyd [*FF*], of which a part only has so far been built, shows how well it can be used.

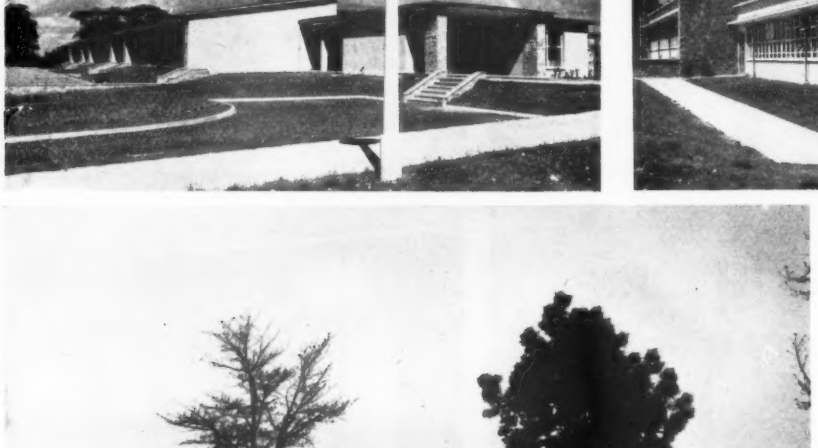
From 1945–51 the co-ordinating architect responsible for elevational control was Mr. William Crabtree [*F*] and after 1951 control was exercised by a panel consisting of Mr. Crabtree, Mr. T. S. Tait [*F*] and Mr. E. G. Catchpole [*A*].

Up to 1953 licences for building in the central area had exceeded £3,500,000 and about £1,000,000 is now being expended annually. Sixty-eight shops have been opened. About £2,000,000 per annum is being spent on houses, schools and other buildings in the remainder of the city. Some 11,000 dwellings have been erected since 1945; 1,000 are being built and 3,500 are projected in the next two years.

In the development plan, the city was sub-divided into 18 neighbourhoods of which 13 already existed and 5 were projected. All five have now been substantially completed as well as a sixth which came within the city boundary in 1950.

It has been agreed that redevelopment of the old inner housing districts must involve some increase in density. Some interesting star flats indicate the type of buildings which are at present being erected in these districts by the City Architect and his staff.

Plymouth. Left: Whitleigh Estate Primary School; Architects, Louis de Soissons, R.A. and Partners [*FF/A*]. Above: Ernesettle Estate Primary School; H. J. W. Stirling [*A*], City Architect



Plymouth. Efford Secondary Modern School; City Architect, H. J. W. Stirling [*A*]; Deputy City Architect, F. Napp [*A*]; Chief Assistant, A. C. H. Harris [*A*]; Assistant Architect, H. Miller [*A*]

Plymouth. Shops and maisonettes at Whitleigh Green Estate; City Architect, H. J. W. Stirling [*A*] and staff

These have an average density of 110 habitable rooms or 36·7 flats per acre. They are in three- and four-storey blocks in a variety of patterns, giving relief from the more usual straight-fronted blocks. Each staircase serves three flats on each floor; floor to ceiling heights are 7 ft. 6 in. The construction is interesting, consisting of reinforced load-bearing brick walls of engineering brick in cement mortar; this allows 11-in. cavity walls to be used externally everywhere, an advantage in a district of heavy rainfall and south-west gales.

Housing in the outer neighbourhoods follows the newest accepted practice in being a mixture of three-bedroom and two-bedroom houses and flats, many of two storeys. The illustrations show a recent scheme of two-bedroom houses the tender price for which in October 1951 was £1,168 per house. They are at a density of 38·61 rooms and 12·87 houses per acre.

There is a welcome absence of monotony in the housing. This has been obtained not only by varied grouping taking advantage of uneven sites, but by the judicious intermingling of brickwork, colourwash and tile-hanging.

The school building programme has been exceptional. Over 7,000 school places were lost as the result of enemy action and the redistribution of population has required new schools in the housing areas. A third of the schoolchildren of Plymouth are now housed in new or rebuilt schools.

A feature of the schools is the occasional use of masonry, recalling as far as is possible today a local traditional craft and material. An outstanding educational building is the new technical college, of which the first block is now being built.

This quick survey of two blitzed cities revealed that both have made notable strides towards renewal. I choose the word 'renewal' in preference to 'rebuilding' because, though much that is old remains, both are virtually new cities, at least as regards their centres. And, considering the difficulties of the times, there is little to complain of and much to praise.

Report of the Joint Committee on Tendering Procedure

I. INTRODUCTION

1. During 1952 tendering procedure in the building industry was the subject of considerable discussion in the technical press and of questions in the House of Commons which culminated on 7 November in an adjournment debate. The concern expressed related mainly to an organisation whose activities were, we understand, referred in March 1953 for examination by the Monopolies and Restrictive Practices Commission but, at the suggestion of the Minister of Works, the Royal Institute of British Architects, the Royal Institution of Chartered Surveyors and the National Federation of Building Trades Employers decided to set up a committee to review tendering procedure generally. Copies of the Minister's letter of 5 December 1952 to the President R.I.B.A. and of the President's reply are included as Appendix I to this Report.

2. It was originally contemplated, in view of the interest in the subject of local authorities as building owners, that the Committee should include among its membership representatives of associations of local authorities; but, as some of them could not see their way to co-operate, the Committee was finally constituted as follows: *Chairman*, Mr. Howard Robertson, M.C., A.R.A., S.A.D.G., President, R.I.B.A. *Representing the Royal Institute of British Architects:* Mr. A. R. F. Anderson [*F*], Mr. Harold Conolly [*F*], Mr. Cecil Howitt, D.S.O., O.B.E. [*F*], Mr. Charles Woodward [*A*]. *Representing the Royal Institution of Chartered Surveyors:* Mr. R. H. Francis, F.R.I.C.S., Mr. E. H. Palmer, F.R.I.C.S., Mr. Cyril Sweett, F.R.I.C.S., Mr. M. H. Thackray, F.R.I.C.S. *Representing the National Federation of Building Trades Employers:* Mr. Wilfred Horsfall (President), Mr. G. W. Grosvenor, Mr. Nigel Hannen, Mr. W. W. Sapcote, Mr. L. A. Walden. *Secretary*, Mr. W. Arthur Rutter, C.B.E. [*F*]. The Committee was assisted by Mr. C. D. Spragg, C.B.E., Secretary R.I.B.A., Brigadier A. H. Killick, C.B.E., D.S.O., M.C., Secretary R.I.C.S., and Mr. S. F. S. Hearder, Director N.F.B.T.E.

3. At our preliminary meeting we decided, whilst agreeing with the view expressed by the Minister in his letter that there were many aspects of building costs which needed review, that we should confine our consideration to tendering procedure; but that we should, however, in our report, make recommendations designed to ensure that other aspects would in future be kept continuously under examination.

4. We also decided to ask a number of bodies and organisations to assist us, not by giving evidence in the ordinary way but by meeting us, with or without the previous submission of written memoranda, and discussing common problems with us fully and freely around the conference table. We regret that some of those invited did not feel able to co-operate with us, even on this footing, and our regret has been enhanced because of the valuable assistance we have received from the Ministry of Works, the Ministry of Education, the London County Council and the Association of Consulting Engineers.

5. We met first in March 1953 and subsequently at approximately fortnightly intervals.

6. We decided at the outset that, in order to expedite our work, it would be well to review the 1944 Report (generally known as the Simon Report) of the Central Council for Works and Buildings on the Placing and Management of Building Contracts and to ascertain the extent to which the recommendations in that Report have been put into practice. This we have done and at the same time have reviewed also the published reports and documents, a list of which is given in Appendix II.

7. We wish to say at once that we agree generally with the recommendations of the Simon Report. Whilst recognising the difficulties which have arisen from restrictions and shortages, we consider it regrettable that, despite the support which those recommendations received from the Working Party on Building Operations, from the Anglo-American Productivity Team and from our three organisations, so little has been done to implement them. The lack of action is all the more regrettable because the Report lays down what is agreed to be good practice and because such defects as exist in the present system of tendering can in our opinion be cured, not so much by the discovery of something new but by persuading all concerned, building owners, architects, surveyors and contractors, to follow the practice of the best.

II. IMPORTANCE OF SELECTIVE TENDERING

8. We feel strongly that the most important recommendation in the Simon Report which comes within the scope of our inquiry is that relating to selective tendering.

9. Like the Simon Committee, we can find nothing to say in favour of indiscriminate tendering and we endorse their view that, when tendering is competitive, it is essential that the competition should, in the case of each contract, be limited to firms who have been carefully selected, according to the size and type of contract, as being capable of, and likely to do, work of the required standard. To paraphrase the Simon Report:

(i) indiscriminate tendering leads to bad building and throws upon the industry an unnecessary burden of time, effort and expense in the preparation of tenders and

(ii) only by selective competition can the building owner expect a good job carried out by a builder who, having obtained the contract at a fair price, can and will maintain a good standard of work.

10. It is the normal practice of the private owner and of the contracting Government Departments to invite selected firms to tender and the latter have informed us that in no circumstances will they revert to the pre-war practice of indiscriminate tendering. The lead given by these Departments has been followed by a small number of progressive local authorities who, we gather, have been fully satisfied by the results. We are also impressed by the evidence given by the Ministry of Education which made it clear that they are so convinced of the advantages of this practice that they would be glad to see it universally adopted for their school building programme. It is, therefore, a matter of surprise and regret that the majority of local authorities still persist in asking for tenders from all and sundry.

11. There are two main methods of selection. The first is to advertise each contract and call for firms to apply for permission to tender and then to make a suitable selection from the applicants. The second is to maintain lists of firms in different areas suitable and competent to carry out works of varying extent and character. In principle the former is preferable because all wishing to tender can ask for and receive consideration, but we recognise that a Government Department such as the Ministry of Works would face a very serious problem if required to advertise the large number of contracts with which they are concerned. Having been assured by them that their lists are regularly reviewed and kept up-to-date, both by the addition of new firms and the transfer of others to different categories, we do not wish to criticise their practice. Indeed, we see no objection to it being followed where thought desirable.

12. As we have not had the benefit of conferring with representatives of associations of local authorities we can only conclude, as did the Simon Committee, that the practice of the majority of local authorities of allowing every contractor who so wishes to tender for every contract arises from the desire to avoid any possible suggestion that the authority may not be acting impartially in selecting the firm for the work, and also from the erroneous view that this leads to economical building.

13. We understand that the doubt which exists among local authorities as to their powers to make the necessary alterations to their Standing Orders is not well founded. We regret that the Ministry of Housing and Local Government have not yet seen their way to encourage local authorities in respect of contracts for which they sanction loans

and in many cases pay subsidies, to change their practice, a practice which was in our opinion correctly described by the Simon Committee as causing serious damage to the building industry.

14. In our opinion it is essential that all local authorities, responsible as they are for the placing of contracts of some 35 per cent of all building work, should adopt selective tendering. We consider that the proper arrangement is for the local authority to make the selection in each case on the advice of their technical officers from a list of contractors who have expressed their desire to tender. If, despite the satisfactory experience of those authorities who have acted in this way, the local authority feel in some doubt, we suggest that they might consider, as an interim measure at any rate, the appointment of an advisory panel, comprised of a lay chairman, an architect, a quantity surveyor and a contractor, who would sift the applications and make recommendations to the authority. Even under this arrangement the final decision would, of course, rest with the local authority acting on the advice of their technical officers.

III. COST OF TENDERING

15. We have examined some recent records of cost incurred by a number of representative contractors in the preparation of tenders. Such costs are, of course, higher than before the war, though the percentage on total value of works is not materially so. The information furnished was confidential but we are satisfied that the cost, though substantial, is but a small part of the overhead costs for which contractors must make allowance in their pricing. The records show a wide variation corresponding to the class of work undertaken. The percentage on the total value of the works tendered for is naturally smaller in the case of a business concerned mainly with large works than where a large number of comparatively small jobs is contracted for.

16. It is necessary that building owners, whether public or private, should understand that this cost must be allowed for in the price of building. It should be recognised as a valid reason for contractors declining to tender and it is, in itself, a justification for limiting the number of tenders called for—the less selectivity the greater the expense in preparing tenders. This expense falls on all building owners, including those whose procedure in these matters is sound.

17. We do not advocate any payment in the form of a fee by way of even a part reimbursement of the cost of preparing tenders.

IV. TYPES OF CONTRACT

18. The matter second only in importance to the need for selective tendering is the choice of the right type of contract for the particular project.

19. It is necessary to give increasing recognition to the fact that developments in structural methods and in equipment as well as in the client's requirements lead to a wide diversity in the demands made on architects, specialist consultants, quantity surveyors and contractors. At one end of the scale are simple domestic structures designed for mass production. At the other are technical buildings of great complexity. This great divergence between types of buildings will probably increase and, of necessity, it affects the approach to the problems of building.

20. The contract of which the Bills of Quantities form part is the most satisfactory type when the information available allows a proper Bill to be prepared. Even for small works, such as individual houses, the superiority of this type of contract is manifest.

21. There may be cases in which there is likely to be the minimum of variation where the alternative form, in which Quantities do not form part of the contract, may be used for small jobs.

22. As a method of selecting a contractor and of arriving at agreed competitive prices, where it is impossible to prepare an accurate Bill of Quantities from more or less complete plans and particulars, the schedule contract based on approximate Bills of Quantities is useful. Accurate Bills of Quantities may be substituted at a later date for the approximate Bills or alternatively the work may be measured as it proceeds. The disadvantage of leaving the work to be measured as it proceeds is that an accurate figure of cost is not obtained until the work and the measurements are complete.

23. This form of schedule contract has the advantage of bringing the architect, quantity surveyor and contractor together for consultation at an early stage when each can draw on the other's experience.

24. A schedule contract without the provision of approximate quantities should only be used for maintenance work.

25. We are of the opinion that the adoption by some Government Departments of a method of tendering by means of prepriced Bills of Quantities is objectionable and we consider that, save in exceptional circumstances, this practice should be discontinued.

26. We agree strongly with the opinion expressed in the Simon Report that the Cost plus Percentage Contract is unsatisfactory and undesirable. It should be used exceptionally only, as for instance, in the case of the restoration of damaged churches, ancient monuments and other buildings where the extent of the work cannot be determined in advance.

27. The Cost and Fixed Fee contract has, as mentioned in the Simon Report, certain advantages if properly applied.

28. The Value Cost contract operated by the London County Council (see Appendix III) is one specifically mentioned in the Simon Report. There are, in addition, other specialised forms of Value Cost contracts which may merit a more detailed examination in their suitability to specific circumstances.

29. Generally speaking, however, we are in agreement with the Simon Report in advocating fixed price as the most satisfactory form of contract, since this is the only method which makes it possible for the building owner to secure the full economic advantages of effective competition. Where, however, the exact scope of the work cannot be determined in advance, a contract on the cost reimbursement basis is justifiable, but the fee should be a fixed sum settled in advance.

30. We have given much thought to the clause in the Standard Form of Contract which provides for a rise or fall in the contract figure according to fluctuations in the prices of materials. We feel sure that all will agree that this clause should be dispensed with as soon as practicable because this would give contractors the incentive, which existed before the war, to buy in the cheapest market and would, therefore, do much to encourage manufacturers and merchants to make further efforts to reduce their prices. It would, moreover, do much to restore the confidence of the small building owner who is at present so often deterred from risking his limited resources by uncertainty as to final commitments.

31. We realise that the problem is a difficult one. On the one hand there is increasing evidence of stability in prices; on the other hand national decisions on taxation (including purchase tax) and decisions to increase wages in, for instance, such industries as transport, fuel and power, may lead to rises in the cost of the manufacture and distribution of building materials. Such decisions cannot be foreseen and a prudent contractor could therefore hardly do other than make provision in his tender against such contingencies.

32. We recommend that representatives of manufacturers, merchants and contractors should confer on this matter at an early date with the first aim of dispensing with the clause in contracts entered into for periods not exceeding 12 months and a final aim of abolishing the clause altogether. To pave the way there might perhaps be an understanding that it would be open to contractors to qualify their tender as subject to adjustment in respect of the prices of any important materials which they agreed to list and that such action would not disqualify their tenders from consideration.

33. We have noted that the National Federation of Building Trades Employers have agreed with Government Contracting Departments that the 'rise or fall' clause should not be used in the case of works estimated to cost less than £3,000 with an estimated contract period not exceeding four months.

V. RELATED MATTERS

Planning in Advance

34. We wish to stress the importance of planning in advance, especially in the preparation of detailed drawings and specifications. This matter was dealt with not only in the Reports of the Simon Committee, the Working Party and the Anglo-American Productivity Team, but in two printed documents, the first issued in 1951 by the Royal Institute of British Architects and the National Federation of Building Trades Employers jointly, and the second by the Royal Institution of Chartered Surveyors in 1953 (iv and vi respectively in Appendix II).

35. The arguments in favour of planning in advance are admirably set out in these documents and need no elaboration here. We recognise that justifiable obstacles to planning in advance sometimes exist but in most cases failure to prepare adequate particulars cannot be justified or excused.

36. We regard it as equally important that specialist services designed by consultants should be subject to the same measure of pre-planning.

37. We are aware of the many difficulties which have existed since the war but are glad to note that these are fast disappearing, owing to the Government's policy of progressive relaxation of restriction and control. We look forward to the day when the industry will be able to function with a minimum of interference and control without which a healthy industry based on enterprising and efficient organisation cannot be expected.

38. As a corollary to pre-planning, we regard it as important that adequate drawings properly displayed should be available for inspection at the tender stage, supplemented wherever possible by the attendance of the architect's representative to explain the drawings. Contractors should make full use of this service.

Advance Information to Contractors

39. We regard it as highly desirable that contractors should be asked in advance if they wish to be invited to tender, and for this purpose they should be notified of the scale of the work contemplated, the date on which the formal invitation would be issued, the date on which tenders would be returnable and the approximate date on which the work is expected to start. They should be informed that refusal of the invitation will not prejudice their opportunities of tendering on future occasions.

40. This is the recognised practice of many well-established offices and, in certain special cases, of Government Departments, and the contractors regard it not only as helpful to the proper organisation of their business but fundamental to their right to decline to tender and to do so before formal invitation is received.

41. We consider that this procedure, since it is generally accepted as good practice, should be adopted in all cases. If this is done, it should remove one of the chief causes of the practice of taking cover prices.

Number of Tenders

42. This will depend on the size and type of contract. We consider that the schedule of ratios between numbers of tenders and costs of works which the Ministry of Works use is satisfactory and might well be followed generally.

43. This schedule is as follows:

For contracts below	£500	4 firms
between	£500 and £10,000	6 ,,
,,	£10,000 and £50,000	8 ,,
,,	£50,000 and £200,000	10 ,,
over	£200,000	12 ,,

For very large and important jobs the list may be restricted to a smaller number of firms known to be suitable for the particular type of work involved, and thought to have available capacity at the particular time.

Time allowed for Tendering

44. The time allowed is, in general, inadequate. We consider that the Ministry of Works' practice of allowing a minimum of 21 days between receipt of tender documents and receipt of tender is reasonable in normal circumstances.

Advising Results of Tenders

45. We call attention to two aspects of the established practice of notifying contractors of the results of tendering. The first is the delay that is all too prevalent, particularly with local authorities, and the second is the absence of any notification procedure from the practice of Government Departments. We do not feel that we can accept the plea of administrative difficulties that has been advanced. It is essential for efficient organisation that contractors should know at the earliest possible moment how they stand, so that they may be able to organise their commitments, and we consider that notification should be immediate.

Delay in Acceptance of Tenders

46. It is inevitable that systems of control will lead to delays in acceptance, and there is evidence that the leisurely treatment of routine processes tends to become a habit. It is necessary for all building owners to understand that long delays in the acceptance of tenders lead to higher initial prices to cover unknown risks or to claims for extra costs due to working under different conditions from those anticipated.

47. Too often the owner wants to make up the time lost through such delay by requiring the successful contractor to start on the site immediately his tender has been accepted. It should be understood that a reasonable time must be allowed for the contractor to place his orders for materials and to organise his work properly.

48. We therefore regard it as equally necessary for a tender to be accepted in a reasonable time and for sufficient time to be then allowed before the contract actually starts.

Sub-contracts

49. We are of the opinion that the principles enunciated in paragraphs 47 and 48 of the Simon Report need emphasising. The architect probably tends to favour service and quality rather than price, and although it may be claimed that contractors command a better degree of competition when they are allowed to solicit the tendering, especially in the case of constructional items such as hollow tile floors, it is nevertheless recognised that architects may wish to continue to nominate sub-contractors whom they know rather than to leave the choice to the contractors. It is, however, undesirable for clients to make direct contracts with specialists, and full support is given to the statement of the Simon Report that it is of the first importance that the general contractor should, subject to the directions of the architect, be in full control of the whole of the executive work on the site.

50. There are many sub-contracts for which the main contractor might be given the opportunity of tendering. The difficulty arises where planning or preparatory work necessitates the letting in advance of the main contract, for the main contractor is rarely known at that stage. However desirable it may be that the main contractor should be given a chance of tendering, it is more important that he should have everything prepared for planning his work economically.

51. We desire also to emphasise paragraphs 51 and 52 of the Simon Report, especially as regards the need for clients to recognise the importance of the consultants' services. Where circumstances justify the employment of consultants, their services should always be utilised. Not only is the design likely to be more economical, but the design costs, which are cumulative when any number of competitors are engaged, are necessarily less. Moreover, it is difficult to adjudicate on the relative value of prices quoted by competitors when the design work is included. Generally speaking, the more explicit the design in the first place, the better the value.

52. There is evidence that contractors are often left too much in doubt of the intentions of the architect through the lack of definition and uncertainty of information available at the tender stage on nominated sub-contracts. We feel that architects should cultivate the practice of furnishing as much information as possible to tenderers.

53. There is also some danger that the nomination by the architect of supplies and suppliers may develop to an unbalanced extent. The contractor needs to be allowed a greater measure of discretion on many minor matters.

VI. JOINT CONSULTATIVE COMMITTEE

54. We are convinced that a whole-hearted adoption of the recommendations in the Simon Report would have increased considerably the efficiency of the building industry and would have removed many of the causes of complaint which have been made against it. We have, therefore, given serious consideration to the best means of ensuring that our recommendations, which in general follow those of that Report, are kept constantly before those directly concerned and the general public. We have concluded that unless definite and continuous action is taken over a long period, little or no improvement on the lines we have suggested can be expected. At the same time we have considered what should be done to ensure that the many other problems facing the industry are considered and regularly reported upon. We finally decided to recommend to the Royal Institute of British Architects, the Royal Institution of Chartered Surveyors and the National Federation of Building Trades Employers that the present Joint Consultative Committee of Architects and Builders, consisting of representatives of the Royal Institute of British Architects and the National Federation of Building Trades Employers, should be expanded by the admission of representatives of the Royal Institution of Chartered Surveyors, and that the proposed Consultative Committee as thus reconstituted should

(i) make periodic statements to the press reviewing the progress made in implementing the recommendations of the Simon Committee and of ourselves, and

(ii) devote its attention to outstanding problems, including that of closer co-operation with representatives of the associations of local authorities.

55. We are glad to report that the three organisations have accepted our recommendations and that arrangements are to be made to set up regional and local organisations in order that interest throughout the country may be stimulated and maintained.

VII. GENERAL

56. We have frankly discussed opinions held in some professional quarters on the alleged delinquencies of contractors and ancillary trades and those held by some contractors on the shortcomings of professional practice. If it is true that the charge of inefficiency can be levelled against certain contractors, it is equally true that not all the members of the professions concerned with building are sufficiently well equipped for the discharge of their functions. Nor can building owners escape censure. Too often private owners and public authorities exhibit a complete misunderstanding of the functions of the professional man, and mistrust their professional advisers and the contractors whom they employ. A healthy condition can only be attained by the growth of confidence between all parties. The professional bodies and the contractors' associations have an equal responsibility in rooting out inefficiency, discouraging malpractices and placing before the public the example of good practice and fair dealing. Within the limits set for this inquiry, the aim can be stated very simply, namely, that every contract shall be properly planned and placed at a fair price with a responsible contractor, carefully selected as being capable of and likely to do the work of the standard required.

57. Mr. W. Arthur Rutter, C.B.E. [*F*], late Chief Architect to the Ministry of Works, has acted throughout as Secretary to the Committee. The members wish to pay tribute to the indefatigable and thorough way in which he has discharged his duties.

VIII. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

i. Selective tendering should be universally adopted (paras. 8–14).

ii. Payment for the cost of preparing tenders is not advocated (paras. 15–17).

iii. Types of contract recommended:

(*a*) for normal use, lump sum contract based on Bills of Quantities (para. 20).

(*b*) for small works where variations are unlikely, lump sum contract without Bills of Quantities (para. 21).

(*c*) for works which cannot be accurately predetermined, schedule contract based on approximate Bills of Quantities (paras. 22 and 23).

(*d*) for maintenance works only, schedule contract without quantities (para. 24).

(*e*) Save in exceptional circumstances tendering by means of pre-priced Bills of Quantities should be discontinued (para. 25).

(*f*) Only in very exceptional cases should a Cost plus Percentage contract be used (para. 26).

(*g*) In exceptional cases, Cost and Fixed Fee or Value Cost contracts are of value (paras. 27 and 28), but these should be on the basis of a fixed fee settled in advance (para. 29).

iv. Early steps should be taken to consider ultimate abolition of fluctuation clause in contracts (paras. 30–33).

v. The maximum degree of planning in advance should be adopted whenever possible (paras. 34–38).

vi. Inquiry as to the willingness of contractors to submit a tender should be made in all cases of selective tendering giving advance information on the work contemplated (paras. 39–41).

vii. Number of tenders invited should be limited (paras. 42 and 43).

viii. Adequate time for tendering should be allowed (para. 44).

ix. Results of tendering should be immediately notified to contractors (para. 45).

x. Tenders should be accepted without unreasonable delay and sufficient time allowed before the contract starts (paras. 46–48).

xi. The contractor should be in full control of all sub-contracts (para. 49) and should be enabled to plan the whole of the work (para. 50).

xii. Where suitable, consultants should be employed for specialist work (para. 51).

xiii. The intentions of the architect in the matter of nominated sub-contracts should be made known to the main contractor as early as possible (para. 52).

xiv. More discretion should be allowed to contractors in minor matters (para. 53).

xv. The establishment of a joint Consultative Committee representing the R.I.B.A., the R.I.C.S. and the N.F.B.T.E. is strongly recommended to keep these and other problems under continuous review, and before the public (paras. 54 and 55).

(*Signed*) Howard Robertson (*Chairman*), A. R. F. Anderson, Harold Conolly, R. H. Francis, G. W. Grosvenor, Nigel Hannen, Wilfred Horsfall, Cecil Howitt, E. H. Palmer, W. W. Sapcote, C. Sweett, M. H. Thackray, Leonard A. Walden, Charles Woodward, W. Arthur Rutter (*Secretary*).
1 March 1954.

APPENDIX I

MINISTRY OF WORKS

Lambeth Bridge House, London, S.E.1
5th December, 1952

My Dear President,

As you are aware, during the past months there has been a marked improvement in the output of building. Nevertheless there is widespread concern about the level of building costs; and there has recently been criticism of the contracting methods employed by the industry and apprehension about the existence of restrictive practices.

It seems to me that these circumstances constitute at once a challenge and an opportunity. In my view the time has come for the industry itself, under the leadership of the Architects, to take more active steps to reduce costs and review contracting arrangements. With the assurance of plenty of work to come, there is every reason for developing contracting arrangements which on the one hand will encourage the proper pre-planning and organisation of the work, and on the other will ensure a proper measure of healthy competition.

You have indicated to me that the Royal Institute of British Architects is prepared to take the lead with the other organisations representing the industry in promoting measures directed towards these ends. In this connection I understand that consideration will be given to the views and experience of Government contracting Departments and of local authorities who are directly interested in a great deal of the work of the building industry. I am therefore writing to assure you of the warm encouragement and support of Her Majesty's Government in the steps you are

taking. You may also be assured that my own good offices and those of the Ministry under my control will be at your service.

Yours very sincerely,
(*Signed*) David Eccles

Howard Robertson, Esq., M.C., A.R.A., F.R.I.B.A.

ROYAL INSTITUTE OF BRITISH ARCHITECTS
66, Portland Place, London, W.1
9th December, 1952

My Dear Minister,

Thank you for your letter of December 5th, which will be read to my Council at their meeting this afternoon.

We shall be very happy to take the lead in this important matter and I am most grateful for the encouragement and support of Her Majesty's Government, and for the assurance of your own good offices and those of the Ministry.

Yours very sincerely,
(*Signed*) Howard Robertson

The Right Hon. David Eccles, M.P.,
Minister of Works.

APPENDIX II

DOCUMENTS AVAILABLE

(i) Report of the Central Council for Works and Buildings on 'The Placing and Management of Building Contracts' (1944), known shortly as the Simon Report.

(ii) Working Party Report on the Building Industry (1950).

(iii) Productivity Team Report on Building (1950).

(iv) 'The Building Owner and Planning in Advance' (1951). (A joint statement by the R.I.B.A. and the N.F.B.T.E.)

(v) 'The Architect and his Work' (1953). Published by the R.I.B.A.

(vi) 'The Chartered Quantity Surveyor and his Work' (reprinted 1953 and published by the R.I.C.S.).

(vii) 'The Planning of Building Operations' (1953). (A memorandum by the Quantity Surveyors Committee, published by the R.I.C.S.)

APPENDIX III

NOTE ON THE L.C.C. VALUE COST CONTRACT

We have followed up the Simon Report reference to the Value Cost contract operated by the London County Council. We note that the underlying principles remain the same, though modifications have been made from time to time in the last ten years, the most important being that the County Council no longer call for tenders for the fee percentage, but have fixed the fee at 3% of the 'target' figure, that is, the value arrived at by applying the schedule prices to the work done. The competitive element is preserved in the tendering of an 'on' or 'off' percentage of the rates and prices prepared by the County Council and inserted in the schedule.

The system is valuable in that it does ensure a definite incentive to the successful contractor, and indeed to all other parties to the contract, and that it provides greater possibilities of co-operation between architects, engineers, quantity surveyors and contractors. It is not, however, a system for widespread application, as it depends upon the existence of a highly trained and special organisation within the employing authority. So far as we can learn, no other authority has employed it.

Copies of the above Report can be obtained from the Secretary, N.F.B.T.E., 82 New Cavendish St., W.1. Price 6d.

Cathedral Acoustics

By Hope Bagenal, D.C.M. [*F*]

The substance of a paper read before the Acoustics Group of the Physical Society, 5 January 1954

FIRST SOME ACCOUNT of the uses of a cathedral. In the Church of England by law established the Bishop's Chair is the seat or see of diocesan authority. The ordering of priests and deacons must be done in front of a bishop—'sitting in his Chair near the Holy Table'. From his Chair he puts questions to candidates which must be answered. The form and manner of ordering begins with a sermon or exhortation—'declaring the duty and office of such as come to be admitted deacons or priests; how necessary that order is in the Church of Christ and also how the people ought to esteem them in their office'. There is also the bishop's challenge to the people—'if there be any of you who know any impediment, etc.—let him come forth in the name of God'. The consecrating of bishops must take place before an Archbishop sitting in his Chair near the Holy Table, and at a point in the service the Archbishop demands the king's mandate for the Consecration and causes it to be read.

There are two other important consecration services: there is the usual order of Confirmation or laying on of hands upon those who are baptised and wish to attend Holy Communion, and this service includes an address by the bishop; and there is also the Coronation Service or consecrating the monarch 'a kind of priest'. In the Coronation we also find a special Chair playing an important part.

Now these services must be done 'in the face of the people'. And the more people present, the more public is the witness and verification. In ancient times this was vital, and was illustrated in the Coronation service last year in the progress of the Archbishop, in Westminster Abbey, to different quarters of the church to assure us that here was our undoubted queen. At the Coronation there is also the 'laying on of hands': there are also, as we see, a number of symbolic acts: and there is the musical element—the singing antiphonally of the 8th-century hymn *Veni Creator Spiritus*, 'Come Holy Ghost our souls inspire'. And all done 'in the face of the people: in the face of the Church'. Here we find one of the origins of the sheer size of the episcopal church building. Large attendances must be dealt with.

I have ventured to link up these various consecration services because they are all part of the framework of the Christian state to which we belong and which holds as in a fortress certain ideas. And also because now the transferred eyes and ears of radio and television can increase enormously the attendance of the public, so that, in the extreme example, Westminster Abbey was in danger of becoming a large studio. Here we find ourselves at one of those difficult *nodes*—characteristic of our times—at which the question poses itself—can gadgets truly serve God?

But of course the service to the community of a cathedral church does not stop there. There are the national services such as Armistice Day: there are the Army and Navy vigils and services of dedication: and the Boy Scouts and Girl Guide rallies. There are Mission weeks. There are Assize Sermons. There are the municipal occasions when the Mayor's chaplain exhorts the Mayor, and when the Guilds and City Corporations find the ancient positions in the nave they have occupied for 500 years. In addition the nave is used regularly for diocesan conferences at St. Albans; and, at St. Paul's, ecclesiastical courts are held in an aisle.

I have presented here some of our problems but by no means all. There is the daily office sustained—a tide of worship year after year; and today we find a real demand to hear the epistle and gospel from the High Altar. Also there are popular 'nave services' with visiting preachers on Sunday evenings: or in Lent there may be a course of lectures.

In cathedrals we often have music performances of choral works such as the Mass in B Minor; the Messiah; the Matthew Passion music. These represent one aspect of Protestant worship at its greatest: also these works are popular. No doubt the demand for them is due partly to the renaissance in music, but they are now weaving themselves into the religious life of this country. The nave of a large church seating 900 is an obvious place for their performance; it is often the largest auditorium in the town; it gives a religious setting. The Three Choirs Festival at Gloucester, Worcester and Hereford is the classic example; and the festival music in the nave of York Minster in 1951 illustrated how impressive a sacred auditorium can be. But in festival music problems arise because

an orchestra of 70 and choir of 250 were not envisaged in the medieval plans; nor will the acoustics of the vaulted nave often give freedom for all forms of choral and orchestral music. But all new cathedrals could and ought to acknowledge these recent powerful reinforcements to institutional religion, and plan for them.

There is also another field of activity; a cathedral is often used for miracle plays; in some ways it can make a wonderful theatral area. I was much moved by 'Out of the Whirlwind—a play written for Westminster Abbey'—a fine apocalyptic play illustrating the ordeal of my own generation. Another very fine play is Dorothy Sayers' 'Zeal of Thy House', written for Canterbury, and needing the kind of theatral area which a large church can give.

And so we see that a cathedral—so far from being an anachronism in a sceptical age—is in fact a *home* for arts and activities: a home only asking to be more used. But before these special uses, I must put first the mission element—the need to present the Word of God and interpret it—to inform, to educate, to re-educate, people ignorant of the Christian answers to our problems.

And what sort of planning comes out of these requirements? I believe there comes out of them a group of buildings rather than one large single hall—a group of buildings of different height, and different acoustic characteristics, but all interrelated, and *when required on great occasions*, able to be unified, as from High Altar or from rostrum, by carefully designed loudspeakers. Here we are on difficult ground. The design feud between the screened church and the church with the long vista is strong and ancient. It moves our hearts and our faculties. On both sides there is a great deal to be said and I wish to speak with humility. Yet my firm belief is that screens, galleries, 'veils' and curtains played a great part in the general usefulness of large churches in the Middle Ages, enabling them to be sub-divided, and in providing some sound absorbents: I believe the auditorium element, and acoustics, need such sub-division and need sound absorbents: and that the Gothic Revival scholars have done a disservice in ignoring this aspect. But I am equally convinced that it is necessary to keep the primacy of the Shrine and preserve good proportion and a sense of worship. Can we do both—can we preserve a sense of worship and allow a large church to be an auditorium also?

Now, in detail, we have some elements as follows, with their appropriate acoustics. First, sanctuary and chancel. We have a fine musical heritage in the Anglican chants: choral music requires an appreciable reverberation; therefore some height and some ceiling reflections are in fact desirable. For unaccompanied plainsong a fairly long reverberation giving a 'reciting note' is essential—otherwise priest and choir will go flat.[1] When we come to the nave we have to consider pulpit requirements. In addition, we have to consider the requirements of festival music—choral and orchestral—as noted above and for this we want a moderate reverberation like that of the Lutheran galleried church which in fact gave the acoustics for the St. Matthew Passion music. If we aim at 3 sec. to 4 sec. optimum for the chancel we should aim at 2 sec. to 3 sec. optimum for the nave; and that may mean a lower ceiling with some sound absorbents distributed in it.

What arrangements follow from these? The rostra for the lessons and sermons would naturally come at the east end of the nave, and, for a number of reasons, chorus and orchestra for festival music is better at the west end. A permanent dais some 3 ft. or 4 ft. high at the west end of the nave (with steps down to floor level and a movable parapet) would both raise rear seats during services, and provide an orchestra platform at music festivals. A permanent west gallery could also be provided and this could have a removable parapet allowing risers to be inserted between it and the dais level when large festival choirs were wanted.

For miracle plays and nativity plays the dais, with steps, and with the permanent gallery or loft above and with the west doors below it, would give an interesting theatral area. Parvise chamber with balcony and steps up to it as at Mildenhall could be planned in conjunction. But the successful performance of such a play must depend on well-placed microphone pick-ups, and loudspeakers speaking eastwards. Let us also add a moderate-sized cell for lecturers, and missions, perhaps in the form of a transept or a galilee; and together with baptistery, with chapels for private prayer, and a well-designed chapter house and choir school, we have the bones of our cathedral group. But another thing suggests itself, namely an atrium, or garden enclosure, adjoining the west end with an open-air pulpit or perhaps with loudspeakers for relaying the lessons, and the epistle and gospel. Our building might then more resemble an Early Christian metropolitan group, but it would be susceptible of a dignified exterior treatment.

Pulpit design nowadays needs careful thinking out. I feel strongly that the reading of the Word in the Lessons is quite as important as the interpretation of the Word in the sermon and that two equal rostra are required. Also they should be of considerable height. Again we are back to the ambones of the Basilican church, but I would remind you that at Leighton Bromsgrove George Herbert, in the 17th century, inserted two equal rostra.

In the auditorium nave a preacher should be allowed to choose whether to use loudspeakers or not. The clergy have not all strong voices, and their voices are subject to strain. The best loudspeaker system should be provided and yet I would design the nave acoustics and the pulpit reflectors such that good preachers putting forth the necessary energy could make themselves well heard for nave services without amplification if they wished to do so. Amplification becomes inevitable on the occasions when nave and chancel and other cells are all filled, and listeners are behind the pulpit or at the extreme sides.

In my opinion microphone pulpit technique is still a reading technique. One is still tied to, and hypnotised by, the microphone. One must not move too far from it; one must maintain an even loudness and an even relatively slow speed. And this makes for monotony. Some good preachers will always forget, and project the fire of their thought by movement and gesture, by their whole personality. In old days I have heard elderly canons in the pulpit, who well knew the acoustics of their nave, play upon the church as on an instrument. They could use harsh or legato tones and knew which vowels must be allowed to die away. If we could only suspend the microphone above a preacher's head, and let him forget it, and use a self-monitoring system as a reinforcement beyond some 30 ft.—that in my view would be the ideal. But in practice it is technically difficult. And so one might have one of the rostra designed with efficient hood reflector and apron reflectors for the unaided voice, and the other without reflectors but designed in conjunction with one of the new 'column' or line-source loudspeakers. And for both rostra we want a wall behind them, whether to reflect the natural voice, or to form a suitable encasement for the column loudspeaker which may be as much as 11 ft. high.

And this leads us to the planning problem of junction between nave and chancel. I want a screen—whether wood or stone—with the principal organ upon it which shall normally serve both nave and chancel. The choir at chancel services would stay in the chancel stalls as is usual: but for nave services I would recommend the choir on the organ loft gallery facing west down the nave: that is to say for ordinary nave services I want organ and choir together, behind and above the nave altar. The unsatisfactory timing of congregational music when organist, choir and congregation are strung out along the nave, and the organist on the screen must anticipate by a beat, might then be reduced.

A radical alternative to this would be as follows: adopt boldly and develop the auditorium-plus-shrine plan of some of the Oxford college chapels (All Souls, Magdalen, and New). These are T plans (see the figure). One arm is the shrine, the other the auditorium. Developing this one would accept chancel and nave at right angles: one would penetrate the nave at the centre of its length and place there an organ on a screen-loft, and place nave choir centrally on nave floor with congregation coming closely round it as at the Keble Memorial church, Mill Hill. This is the way to lead a congregation and train it. Then nave altar and preaching rostra are at one end of nave; festival dais and gallery at the other end; and choir in centre leading congregation. The disadvantage is that High Altar and nave altar are not on the same axis unless indeed the nave altar should be placed on the intersection 'table-wise'.

[1] The tonality or 'note' of a large church is generally in the neighbourhood of the 'tenor A' (426 cycles). This would naturally be the reciting note of the priest because he could intone on it with less fatigue and also could more easily maintain the pitch.

Canon Addleshaw and Mr. Etchells in their book *The Framework of Anglican Worship* have reminded us that in Elizabethan times the Holy Table could be brought, and was brought, down from a remote position into the nave. The rubric still permits the Table to stand either in the body of the church or in the chancel. I believe there is nothing in the Book of Common Prayer to prevent an axis of bishop's Chair—nave altar—High Altar, being crossed by the nave axis with nave altar at intersection.

The west dais for festival music and miracle plays should in all cases have a separate electrophonic organ. We had one at York installed for the purpose. Before leaving organs I must emphasise that a large number of complaints come to me about not being able to lead the congregation from organs in chancels or in deep transepts. This is also due to long naves. There is today a tendency towards wider, shallower sanctuaries and shorter naves, bringing greater intimacy between clergy and congregation: and this is all to the good acoustically. I would also like to refer you to the excellent Report of the Archbishop's Committee on *Music in Worship*—revised 1938—which envisages the main choir on a west gallery or behind the congregation and suggests that there should be a small group of chanters in the stalls with the clergy who would sing three-part or four-part harmony, or a descant, while the main choir plus congregation sing the melody as a canto fermo.

In a cathedral the choir school is important: it should be a properly designed rehearsal room able to take the normal choir. It ought not to be a small vaulted chamber with a long reverberation (as is frequently the case) but a big room with a moderate reverberation so that smaller groups can be taken at a time and find acceptable tone conditions. I might here include the chapter house: it is an ecclesiastical committee room and needs treatment as such. The tiled floor and stone vault do not make a good auditorium. In the Middle Ages the floor was probably deep in rushes, giving some sound absorption. Today we ought to provide distributed sound absorption on walls and ceiling.

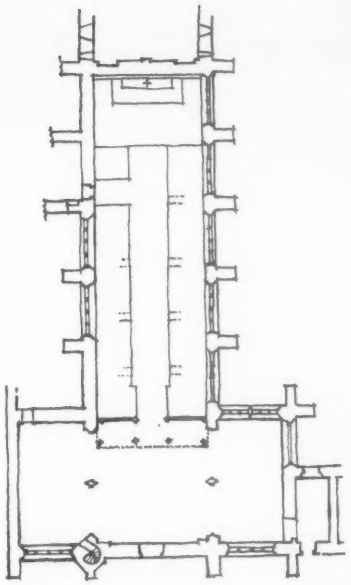
Now you will see from all this that planning, screening, and inter-relating of the parts of the church are desirable, whether for the old eternal requirements or for more recent requirements: but also we must look carefully at sound absorbents and at loudspeakers. The two are related. We cannot dispense with sound absorbents by employing amplification. Any amplification system is made more difficult by a long reverberation and is improved, and made more fool-proof, by reducing reverberation. For absorbents in the old days we used to have box pews, pew cushions, galleries with their seatings, great baize door curtains, sacred tapestries, rushes strewn on the stone floor, font veils, Lent veils, hatchment boards, regimental colours, houseling cloths, peribolus curtains—all swept away by our grandparents. Today we have a series of wall and ceiling materials which can be serviceable but which have some disadvantages. A church does not come into the short-term building category characteristic of our times. Its expectation of life is hundreds of years: it is often left uninspected for a generation: its materials must be durable. And this is specially the case for vaults and ceilings. Again the development of stone vaults was largely prompted by fire defence, and this must still be borne in mind. We should ask of any firm what will happen to their absorbing material after it has formed part of an exposed nave ceiling for 150 years, and has received no attention whatever. And equally—what will happen to it if it has had plenty of coats of distemper.

I suppose the oldest absorbent vault of modern times is that of the cathedral of St. John the Divine in New York done in granular foamed pumice tiles by the Guastavino Co. of Boston about 35 years ago. These tiles were carefully precast and were about 1 in. thick. The pores were interconnected very successfully and you could pour water straight through a tile. It was given an absorption figure at middle pitch of 0·36 by W. C. Sabine. But when the same kind of ingredients were dry mixed and applied as a plaster the laitance tended to come to the surface and porosity was reduced. Whether in the form of tiles or plaster the little granules were liable to drop off. By the empirical porosity test of pouring water straight through I do not know of any other tile as good. 'Acoustic plasters' relying on porosity only for absorption must suffer from laitance coming to the surface, especially when they are ceilings. This means that it is difficult to relate the performance of test specimens in the laboratory, carefully prepared and often limited in area, to the kind of performance to be expected on the job.

But there is another objection, namely that porosity absorption alone without any resonance absorption must function predominantly in the upper register in large halls, whereas it is the middle and lower registers that require maximum absorption. Some authorities tell us that in large halls, owing to the natural absorption of the atmosphere, and of dust on rough surfaces, no special high frequency absorbents are required at all. And it is certainly most undesirable for preaching to absorb all the sibilants and consonants (all high in pitch) on which intelligibility depends, and leave vowel tones ringing like musical bells. But that is what tends to happen if absorbent plasters are used.

Precast granular tiles are more promising because larger pores could be made. Some form of precast granular tile, durable like a travertine or like the Cottesloe stone (an Australian natural absorbent stone) and having large inter-connecting cells, and giving 50 per cent absorption at middle pitch, would in my opinion be worth considering for 'fire-proof' church roofs.

Another requirement is surface appearance and redecoration. Here those absorbing materials such as slabs or sheets that have perforations and can be distempered and redistempered without reducing efficiency have a clear advantage. But some of these



are 'fire-proof' and some are not. The 'wood-wools' impregnated with Portland cement give an all-round performance but often have a rough finish. The mineral-fibre sprays are 'fire-proof' but tend to go dark with the years and then they are liable to be coated with distemper by a new generation and efficiency spoiled. Many sound absorbents are good heat insulators and over a large roof area can greatly reduce heat losses. There are now on the market fibrous plaster sheets which fade out their joints and can give a grille pattern on a continuous field: above the grille in the roof space a mineral wool blanket could be suspended: in such cases easy access to the roof space, and the keeping it clean, should be borne in mind.

In all modern designs I recommend clerestory galleries, haunch gangways, ceiling openings for cradles, so that all novelties in the way of construction and surfacing shall be easily kept under survey. I mean by 'novelties' anything less than 100 years old (St. Albans Abbey is 874 years old). The shape of the ceiling is important. The segmental vault struck from floor level or near it, and focusing sound on a hard centre gangway, is bad. It is frequently proposed in shell concrete construction. One can easily place on it an expensive absorbent and get very little noticeable improvement. Domes and barrels are also a danger. On the other hand, the waggon vault, the stepped roof, the flat pitched, the open timber roof, are all forms that allow of easy treatments. For sound absorption purposes I must plead for religious tapestries: large reredos hangings, good fabrics and curtains, as objects of donation rather than stained glass windows.

Finally we approach some of the more difficult details of amplification. First, are we going to try for a simple fool-proof system; or is that truly impossible, and

must we acknowledge the need for a fairly elaborate control board in a good monitoring position, with the intelligent attendant always on duty when amplification is used? I believe that for cathedrals the latter is necessary and that a great deal depends on the intelligence of the attendant. Next I want separate circuits so that chancel, transepts, retro-choir, can be switched off when nave services are on: also if there are loudspeaker units down the nave, and only a small congregation under the crossing present, it is useful to be able to turn off those not required at the back.

The new method of 'mechanical delay' by steps, down a long nave, is certainly a new instrument in church amplification. By its means the arrival of sound upon the ear from near and distant sources can be synchronised. Moreover, if the loudspeaker source near at hand be given the right delay so that it arrives just a fraction *later* than the voice from pulpit, it tends to act psychologically like a bit of reflected sound and does not distract the attention from the pulpit source. In an experiment out of doors, under Mr. Parkin, I have experienced how a loudspeaker near at hand, suitably delayed, can provide the *volume* of sound, while the *direction* still seemed as from the man on the rostrum.

Another new instrument is the 'column' or 'line source' loudspeaker assembly, which sprays out the sound in a wide horizontal fan of about 120° and keeps it near ground level. This is a fine technical contribution. How can we apply it? The 'columns' are from 8 ft. to 11 ft. high approximately and must be slightly tilted forward. In an existing church like St. Paul's they can be placed on the west side of the massive square piers which serve to give a back reflector to each column. It is important that delayed sound should not find its way eastwards or it would act as an artificial echo. If the piers are too narrow, or too subdivided, to enclose the units, can they be placed as isolated standing fittings, or could they be made movable? (Note: this question was answered in the discussion. They can stand isolated provided one or two technical precautions are taken. They cannot be considered as movable because they have to be tilted and directed each for a given position in the church. It is for the latter purpose that a recognisable stance from which it will not be moved, such as against a pier, and commanding a clear area, is chosen as desirable.)

In a church with a short, wide nave, one 'column' only, placed near the rostrum and speaking through a grille, could undoubtedly serve the whole church. Perhaps in large new churches we should aim at this and thus link up with the wide short plan. But the tendency would be for the preacher to substitute the column speaker for his own voice to a much greater extent, and also to take a large part of the service, including church notices, from a single rostrum position.

I raise these questions deliberately because it is obvious that the 'column' assembly is going to influence auditorium design, and we want to explore it.

In churches where column units and delay mechanisms are not—for any reason—possible, I believe that good results can be had by pendants giving down radially and hung at different heights, thus reducing the discrepancy, with distance, of sound arrival times. Of course one cannot achieve the 'illusion of direction' (as with a mechanical delay) but sound coming from immediately overhead does not give away its direction easily (that is why bombs are more unnerving than shells). A difficulty is the decorative treatment of the pendants at irregular heights: and also the fact that a close congregation, or a floor carpet, is desirable to prevent inter-floor and vault reflection.

Then there is the need for a frequency control, as well as a volume control. The human voice varies immensely. The English language has far more sibilants than other European languages and depends for articulation upon them. These are high in pitch. I have found that control boards are usually set in churches with the high frequencies on full, and the bass turned off altogether. This needs attention on the part of engineers. Those preachers, English and American, most unintelligible, are those with weak sibilants and weak consonants. On the other hand, those with a hiss must be turned down in the upper register. Again, elderly people tend to lose with old age their middle or vowel tone but preserve the high pitch, and they too could be compensated for. Preachers with a floating bass also need correction on the control board. But the point one always returns to is, how to simplify all these possibilities, how to make a workable instrument which can be learned by the unskilled. Also it must be recognised that the first and most devastating fault in a preacher is too fast a speed in church whether with, or without, amplification. Amplification will not in my opinion obviate the need for slow delivery.

The Architect's Dilemma

Reprinted with permission from 'The Economist' of 25 July 1953

We publish the following article at the suggestion of the R.I.B.A. Public Relations Committee. While not agreeing with all the statements and conclusions in it, the Committee think that this survey of the present status of the profession by an economist will be of interest to members and will stimulate thought and discussion on the future of the profession.—EDITOR.

MORE ARCHITECTS are practising their profession than ever before in Britain, and the output of qualified young men and women was never higher. The profession is increasing at a rate of over 6 per cent a year and nearly everybody—at the moment—is getting a job. The proportion of building work that is being planned or directed by architects is increasing encouragingly. It was only 5 per cent of all building operations before the war, and now it may be 15 or 20 per cent.[1] Architects are working on types of building from which they were previously almost excluded, such as local authority housing and schools. Yet the profession senses an undertone of public criticism of its conduct; it is far from happy about its present fortunes and is uneasy about its future. Controversy invades architectural journals and conferences; a radical wing even questions whether the professional status, built up so laboriously by the Royal Institute of British Architects, makes any sense at all in the postwar world.

The social changes which have taken place since 1939 have overset the traditional order of things for the architectural as well as for the medical profession; moreover, architects are struggling to come to terms with the technological revolution that is slowly overtaking building, despite the opposition of builders. Before the war, architecture—the design of traditional kinds of building with traditional materials—was still mainly in the hands of the private practitioner (so far as it went to architects at all). He made anything from a just tolerable middle-class living to a fair-sized fortune out of it. Only those products of the schools or articled training who had neither capital nor talent for private practice took the salaried posts that local authorities had begun to offer in growing numbers. Since the war the balance has changed spectacularly. It is the salaried architect who is getting the interesting work; the private architect does the chores.

The reasons are obvious, though few foresaw them. Before the war public bodies and private concerns put out their work to private architects; and so did the well-off and wealthy, who were still building houses, if no longer mansions. But, since the war, building controls and priorities for council housing and schools have put most building into the hands of local authorities, who have expanded their own architectural departments. So have nationalised in-

[1] The statement about the proportion of building work undertaken by architects is incorrect. A study of this subject was published by the Public Relations Committee in the JOURNAL of 17 July 1939. This showed that, excluding speculative and municipal housing, architects were then responsible for at least 85 per cent of the total value of true building work; if housing were included, the figure was 50 per cent. Since the war when speculative building has been much restricted and architects have been in charge of most local authority housing, this latter percentage has certainly been much higher. The writer may have taken official building industry figures for building *and public works. Editor.*

dustries; so have regional hospital boards; so have many large firms. The salaried architect, however underpaid and frustrated, has handled most of this work—and has kept control of even that part of it which has been 'put out'. The private architect has had to be content with this overflow from public offices, together with such priority factory or commercial building as has come his way, plus conversions, war damage repairs, exhibitions and suchlike, to fill the gaps.

Meanwhile, the costs of running a private office have soared along with the taxation levied on the profits, if any. To be able to handle a remunerative commission, offices must be reasonably staffed. To carry the overheads between remunerative commissions, all sorts of odd jobs must be accepted. Even so, a private office often proves undermanned to deal with a big job—and any consequent mistakes or delays will draw criticism upon the profession. Big commissions tend to be concentrated upon a minority of large and experienced firms. This is especially true of factories, generally the most remunerative work. It is said that two or three firms have handled all the sizeable factories put out to architects in Scotland since the war. It has become almost impossible to start a new practice, and survive.

Of the 18,000 registered architects in Britain over half are already in salaried employment. They have in many cases found themselves taking instruction from seniors who were hardly regarded as the cream of the profession when they first went into local government service. Their prospects rarely exceed a top salary of £1,800 and a pension. But they have done most of the worthwhile architecture since 1946. Their efforts, not surprisingly, have encountered a lot of criticism—not least from builders, some of whom have the hardihood to declare that whether or not postwar houses are better designed than their forerunners, they are not designed to minimise cost or site delays. Nor has extravagance been confined to houses, as anyone who visits a new power station soon realises.

But the disgruntled private architect is in no position to point the finger of scorn. In his small office he often lacks the resources to tackle large programmes of work or to experiment with new techniques and materials: so much so that group practice has been proposed. He must face the fact that the most remarkable postwar architectural achievement has come from salaried architects. Thus the Hertfordshire County Council first showed in its school building what could be done by preplanning, modern technology and costplanning; and from its pioneer work has sprung the schools building programme now organised by a team of architects, engineers and administrators in the Ministry of Education. They have not only reduced the cost per school place by 45 per cent since 1949, despite a continuous rise in building costs, but have demonstrated a variety of non-traditional methods and materials—and even invented some—within a genre of architectural comeliness which has brought foreign architects flocking to these shores. A bitter pill this for the old school, whose efforts in the interwar years hardly raised a flicker of interest among their questing overseas colleagues, who turned rather to America or Sweden for work of note.

It is clear to almost all architects that the prewar market for their services has disappeared with the last remnants of Galsworthy's England. Even the system of competitive tenders and contracts which the architect supervises is becoming obsolete. Tendering becomes too costly when three-quarters of the bill of quantities is for specialised materials at fixed prices; it imposes a rigidity of design which keeps costs high. The idea of the architect as standing between the owner and the builder is of doubtful relevance to the needs of a new age—which are for economical, standardised, efficiently-designed shelters for families, staff, production-lines or what else. This may be vulgar; it may not leave much scope for what the old school calls architecture; but it does leave scope for a tremendous technological development which the younger school views with undoubted relish.

Circumscribed by the R.I.B.A. code of professional practice—a development of little more than sixty or seventy years—the private architect has tended to hold aloof, concerned at least as much with art as technology, sometimes taking refuge from technology in art; all too often disinterested in close costing and good administration. In theory the leader and grand co-ordinator of the building team (which includes the quantity surveyor, the surveyor, the structural engineer, the contractor, the builder and other specialists), the architect has, in the opinion of the radical school, all too often been lost in the ensuing babel; and the specialists sometimes have to rescue him from the consequences of his own ignorance. To reassert his leadership, it is held, the architect must again become the master-builder, a man with a technical training adequate to make him practical and at home in modern technical developments.

Immediately after the war, indeed, the R.I.B.A. set up a special committee to advise upon the overhaul of architectural education, and a second—the Architectural Education Joint Committee—is now working over the problem again. For there is little agreement on how the architect is to be trained for his commanding position. Over a third of young architects still receive their training outside the schools—usually by training in private offices where they make insufficient contact with modern building conditions. Even in the schools, the teachers are often men who were trained in prewar conditions and have not adjusted their teaching to modern needs, though some schools are radically overhauling their methods. There is a growing feeling that architecture must be integrated with technology in general; it is even suggested that properly remodelled courses in architecture and in engineering—civil, mechanical or electrical—would share the same first-year syllabus. Students themselves seem to demand more technology and less art.

Educational reconstruction, however, would not alone solve the professional dilemma. It might provide better technicians for the public offices, where their talents would be used or abused, according to the quality of the senior architect. It should improve every architect's power to deal with builders and specialists. But it would leave the future of undercapitalised and underequipped private practices still in doubt. Many architects hope that easier times and the private client will return, that local authorities and regional boards will disgorge commissions, and that the architect will be restored to his proper place —that of the specialist consultant who in a fiduciary capacity stands between his client and the builder, earning his fees because of his disinterested professional status.

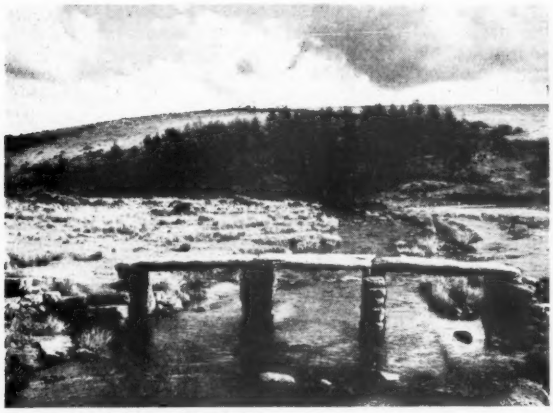
Others see a different future for the private architect. The way in which he can become again the master-builder is, according to this school of thought, to be a part of a firm of contractors or builders—an honest and knowledgeable business man in the best modern professional sense. He should be neither employee nor consultant, but preferably a director. Again, he ought to be fully involved in the many firms who are making building components or developing prefabricated systems. If, it is argued, the architect is not the designer of new materials and methods, he will miss the crucial development in modern building. He will risk becoming the prisoner of other men's design and architecture.

To accept such an argument means, in terms of the R.I.B.A. code, that the architect would change sides. He would become a salesman rather than the guardian of his client's interest. The institute sticks to the view that if the architect is to lead the building team, and even effectively to influence design 'at the production end', he must hold fast to his fiduciary status *vis-à-vis* the client—even if the 'client' is a committee of architects and technologists. The radical school thinks this argument unreal. It foresees that more and more work will be done by departments of qualified salaried officials, or by tough 'business architects', while private practice shrinks to the hard core of big consulting firms, which, in numbers and organisation, will approximate to the firms of consulting engineers, who form so important, but numerically so small, a part of the engineering profession.

It is not, for those who appreciate the aesthetic values in architecture, a very comforting prospect; and, indeed, the radicals probably underestimate the strength of the small provincial practice matching the small provincial builder. But if private practice is to be kept alive as a vital, independent and experimental force—and art—amid an increasingly official architecture, the profession must certainly adapt itself, and quickly, to survive in a changed world.

Devon Architecture

Some old buildings to be seen on the Conference Tours



The ancient bridge at Postbridge

Exeter Cathedral. The nave from the south aisle

Barnfield Crescent, Exeter

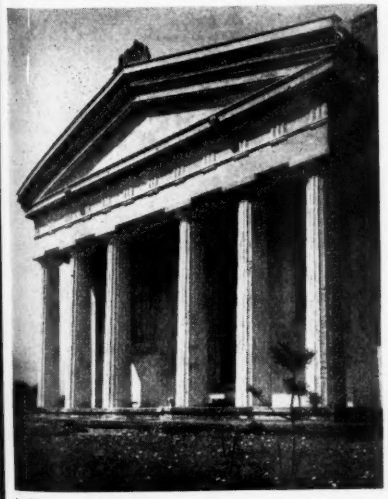
Old houses in High Street, Totnes

Entrance front of Torre Abbey, Torquay

Gatehouse and garden front of Torre Abbey, Torquay

Mol's Coffee House, Exeter, 1596

The Spanish Barn, Torre Abbey, Torquay. Used as a prison for Armada prisoners 1588



At Exmouth, 1824

Right: Regency houses in Pennsylvania Park, Exeter

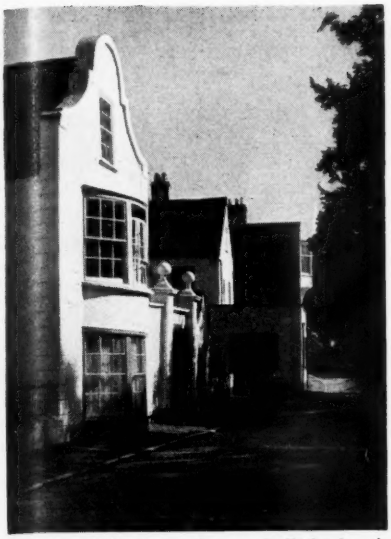
Exeter Cathedral seen from a cleared blitzed area

Torquay. View across the inner harbour from Vane Hill

Kingswear. Castles at the mouth of the River Dart

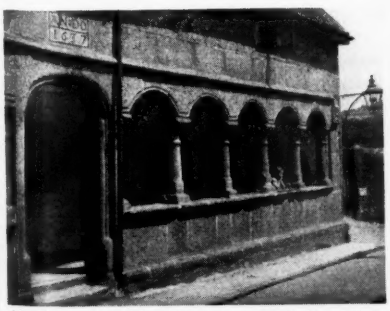
Exeter Cathedral. North transept tower, 1112–1136

Teignmouth from across the River Teign



Topsham. 17th-century houses built by immigrant Dutch merchants

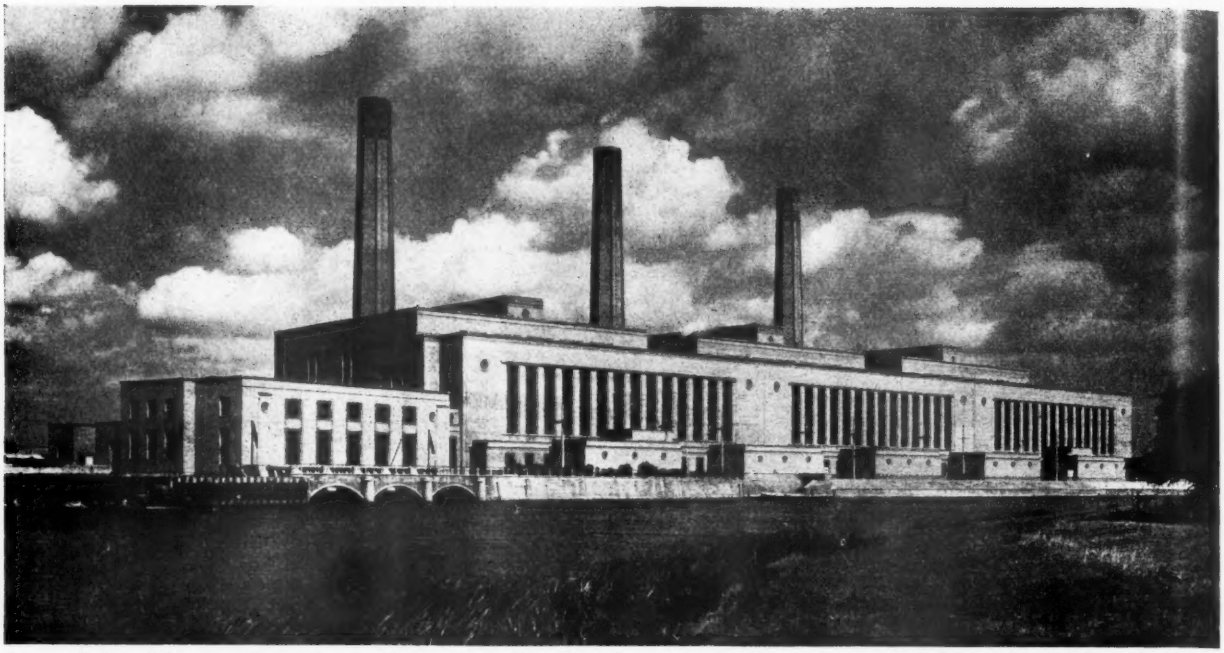
Exeter. The Elizabethan Guildhall, built on a 14th-century structure



Almshouses at Moretonhampstead. Owned by the National Trust

Exeter. A terrace in Pennsylvania Park

The Guildhall, Totnes, which is locally claimed to be the oldest municipal building in England



A general view of the generating station, looking across the River Trent from the south. The programme includes a similar building, of which the site lies to the right of this photograph

Staythorpe Generating Station, Nottinghamshire

Consulting Architects: Cecil Howitt and Partners [*F*/*A*]

Awarded the R.I.B.A Architecture Bronze Medal and Diploma in the area of the Nottingham, Derby and Lincoln Society of Architects

THE ECONOMICAL GENERATION of electricity depends largely on adequate supplies of cooling water and of low-priced fuel, two requisites in which the generating station at Staythorpe is well served, situated as it is on the banks of the River Trent—which has the third largest catchment area in the country—and within easy reach of several collieries; furthermore, borings have shown that the coalfield extends up to and beyond the Trent, so that as mining development proceeds the station will become more and more favourably placed as regards coal supplies. The programme of development at Staythorpe provides for two stations, of which the first has been built and is the subject of this article.

The site was flat but at a level of approximately 38 ft. above ordnance datum, a level which made it liable to flooding; the first operation therefore was to build an access road, a camp site and an extension of the existing railway embankment, all at a level of 45 ft. above ordnance datum, and for this purpose borrow pits were excavated, to be filled in with ash when the station came into production.

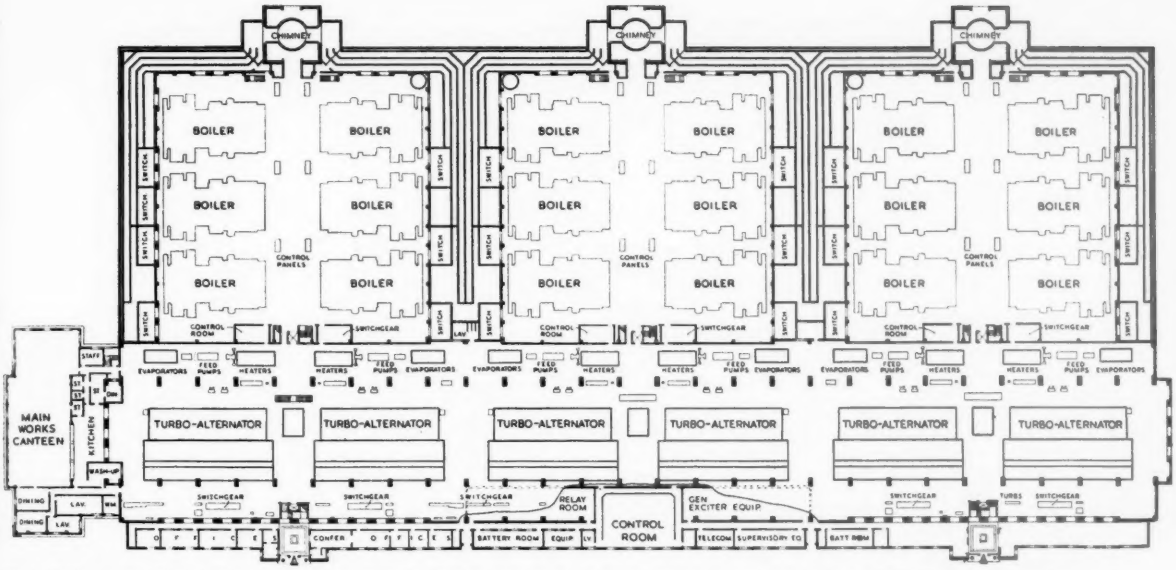
Although the level of 45 ft. was required for site works the problem of river flow in time of flood precluded the general raising of the site to that level, but viaducts in the sidings, embankment and culverts under the new access road were built during the first stage of the work. The site of the first station was stripped, levelled and piled, some 2,194 piles being driven. The difference of 7 ft. between the natural level of the ground and the safe level of 45 ft. was used to advantage by constructing cable tunnels, sub-stations and other foundations; these were built up and were afterwards filled in to the required finished levels. In forming the deep foundations for the tipplers and conveyors a de-watering system was used to keep the excavations free from water.

This first station is to be equipped with six 60 M.W. turbo-alternators having a total capacity of 360 M.W.; they are placed in line down a turbine room running parallel to the Trent; behind and at right-angles are three boiler houses each designed to contain six boilers arranged in groups of three on opposite sides of a central firing aisle. They are fired by spreader-type stokers. The circulating water intake and pump house contains six vertical pumps each of 50,000 gallons per hour capacity. Water from the river is taken in through inclined coarse screens followed by band screens and there is also a floating boom across the intake to intercept debris.

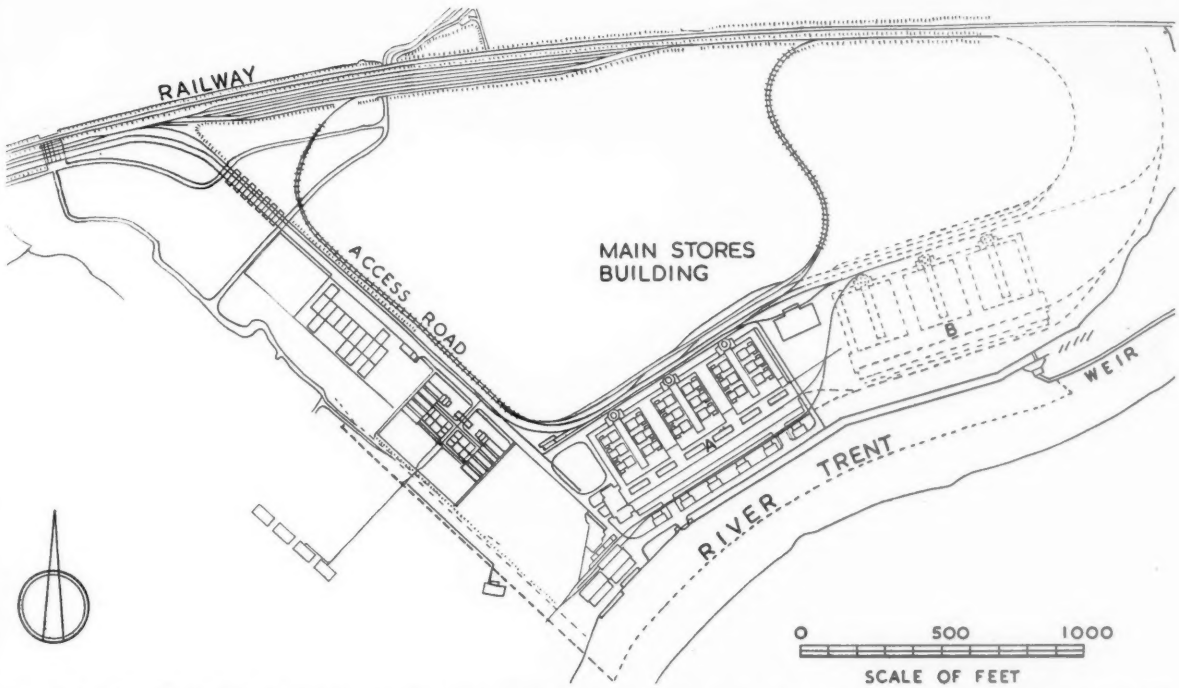
Apart from the plant the general accommodation includes main offices, a canteen and a well-equipped laboratory. The main offices have been placed at ground level adjoining the main entrance, additional accommodation being situated at convenient points throughout the building; the canteen seats some 300 persons and is run on an all-electric cafeteria system. There are also staff dining-rooms.

The general construction is in steel frame faced with Stamford stone sand-coloured brickwork externally; internally white facing bricks have been used to ensure the maximum reflection of the natural lighting. The exposed steelwork in the turbine room has been coated with aluminium paint; the finish in the boiler house is olive green.

With the object of expediting the general construction the opportunity was taken, while the preliminary works were in progress, of precasting various concrete components; indeed, with the exception of the lamp standards all concrete requirements were made on the site. Precast blocks were



Plan of the generating station showing the three boiler houses set at right-angles to the turbine room containing six turbo-alternators

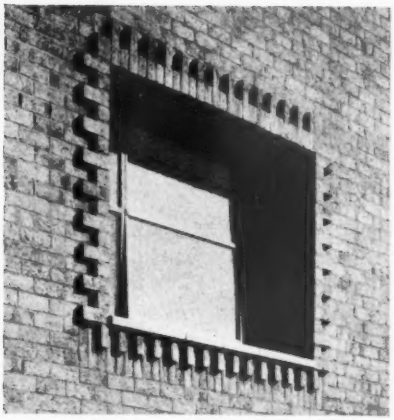


General site plan. The building described in this article is marked A. The site of the second station on the programme is shown dotted at B

used as formers for the concrete and remained in place as facings, and by so doing the need for timber shuttering was largely eliminated. Reinforced concrete beams and other parts were prefabricated in large numbers; thus it was possible to keep the general construction well in advance of plant deliveries and in consequence erection of the plant was not delayed.

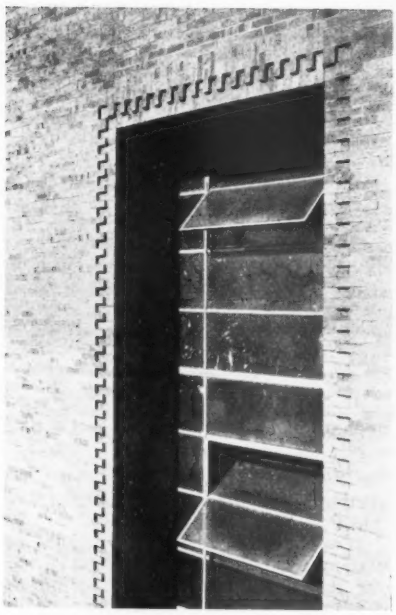
The consulting engineers and contractors were Messrs. Balfour, Beatty and Co. Ltd. The Divisional Controller for the East Midlands Division of the British Electricity Authority is Mr. L. F. Jeffrey, B.Sc., M.I.C.E., M.I.Mech.E., M.I.E.E.

It will be remembered that this generating station gained for Cecil Howitt and Partners the R.I.B.A. Bronze Medal 1953 for the Nottingham, Derby and Lincoln Society of Architects' area.

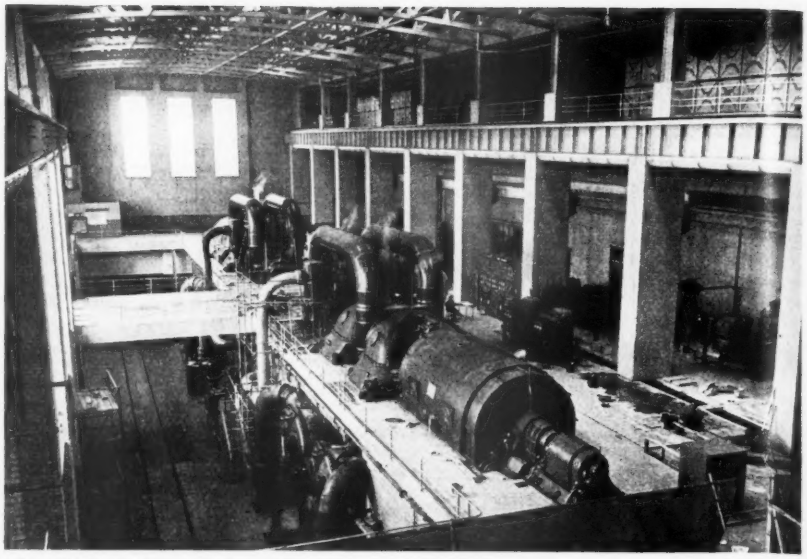


Brickwork detail of window surround

A circular feature in brickwork



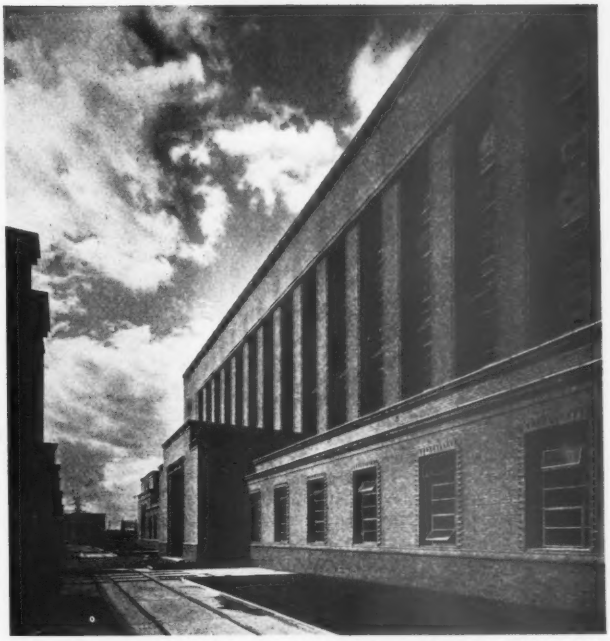
Typical detail of brick surround to tall windows



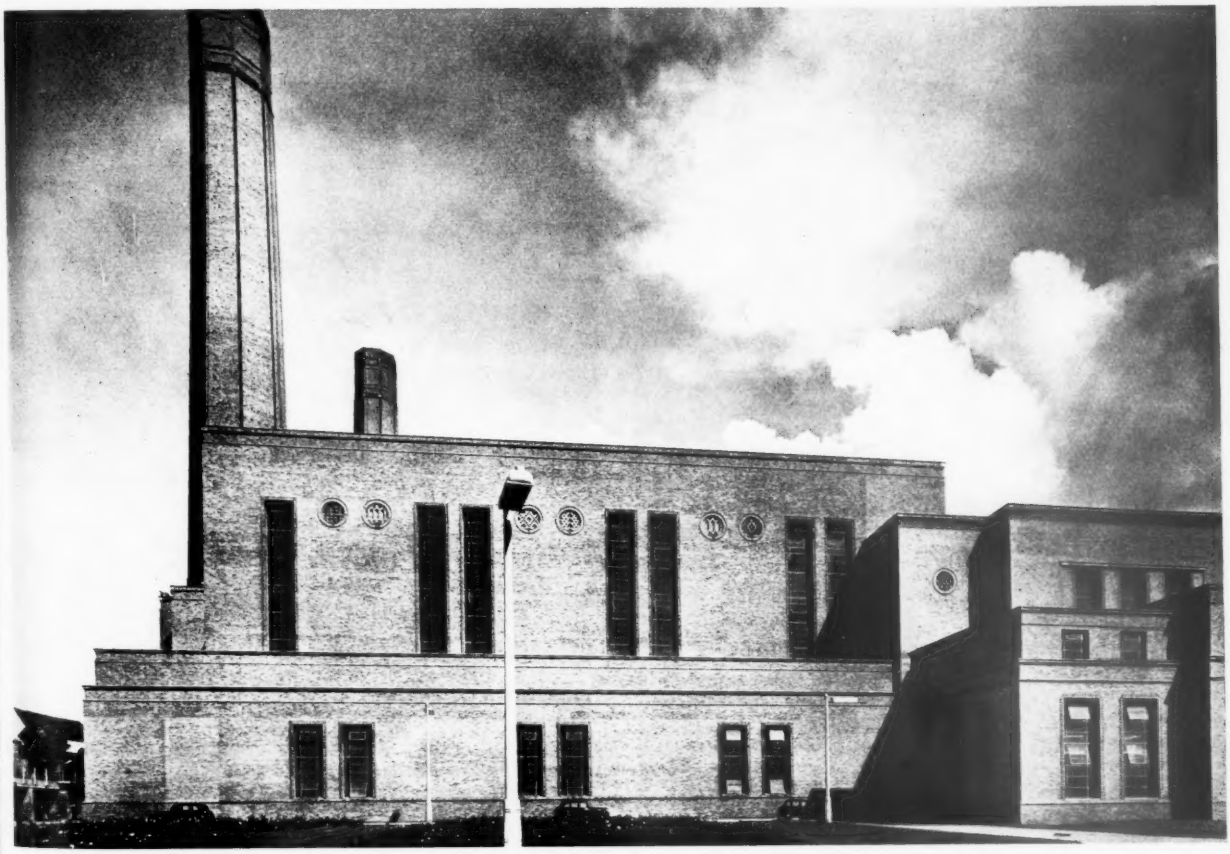
View of the turbine room, showing Nos. 1 and 2 T.A. sets

View of turbine room basement, taken from the workshop

View of the main front, looking east, showing one of the entrances



View showing the western end of the main front. The tall windows light the turbine room



The western flank. The seven tall windows light the western boiler room

Exhibition of Polish Architecture at the R.I.B.A.

THIS EXHIBITION, which will be on view in the Henry Florence Hall from 21 May to 4 June, has been prepared by the Union of Polish Architects. One-third of all buildings in Poland were utterly destroyed in the war and nearly all Warsaw was razed to the ground. Most of the 41 panels and five models in the exhibition show new government, cultural, educational and recreational buildings, housing estates and new towns, factories and transport buildings, rural architecture. Nine panels show old buildings of architectural interest, many of which were destroyed and have been rebuilt.

The exhibition has already been shown in Glasgow, Birmingham and Nottingham and, after leaving the R.I.B.A., is to go to the School of Architecture, Manchester University.

Model of the Palace of Culture and Science in Warsaw

Marszalkowska Street, Warsaw

The reconstructed 'old town', Warsaw

Conditions of Engagement and Scale of Professional Charges

As Finally Approved by Council

A. CONDITIONS OF ENGAGEMENT

1. Members of the R.I.B.A. are governed by the Charters, Bye-laws and Code of Professional Conduct of the Royal Institute.

2. The Architect shall give such periodical supervision and inspection as may be necessary to ensure that the works are being executed in general accordance with the contract; constant supervision does not form part of the duties undertaken by him.

3. In cases where constant superintendence is required a Clerk of Works shall be employed for this purpose. He shall be nominated or approved by the Architect, and appointed and paid by the Client. He shall be under the Architect's direction and control.

4. The Architect shall not make any material deviation, alteration, addition to or omission from the approved design without the knowledge and consent of the Client.

5. The Architect has authority to give orders on behalf of the Client if such are necessitated by constructional requirements provided that the Client shall be immediately notified thereof.

6. The Architect shall, if requested to do so, at the completion of the work, prepare free of charge to the Client, drawings sufficient to show the main lines of drainage and other essential services.

7. The following Architects' charges do not include for Surveyors' work for which see clauses B.11 to B.16 which are those of the Royal Institution of Chartered Surveyors adopted by the R.I.B.A.

8. The employment of Consultants shall be at the Architect's discretion in agreement with the Client, and Consultants shall be nominated or approved by the Architect, and appointed and paid by the Client.

Where it is agreed to retain the services of Consultants in no case shall the Architect's fee be reduced by more than one-third on the cost of the work upon which the services of the Consultants are retained, provided always that the Architect's fee on the cost of the whole scheme shall not be reduced by more than one-sixth.

9. An engagement entered into between the Architect and the Client may be terminated at any time by either party upon reasonable notice being given.

10. Copyright in all drawings and in the work executed from them will remain the property of the Architect.

11. Under these Conditions of Engagement, the fees and charges payable to the Architect shall be in accordance with the following Scale of Charges.

B. SCALE OF CHARGES

NOTE: Apart from two copies of the contract drawings as provided for in Clause B.1 *and the drawings specified in Clause* A.6, *the fees as set out in this Scale of Charges are in all cases exclusive of the cost of all prints and other reproductions of drawings and documents, travelling and hotel expenses, and other reasonable disbursements.*

1. New Works. For taking the Client's instructions, preparing sketch designs, making approximate estimate of cost by cubic measurement or otherwise, submitting applications for building or other licences and town planning, bye-law or other approvals, preparing working drawings, specification or such particulars as may be necessary for the preparation of bills of quantities by an independent Quantity Surveyor, or for the purpose of obtaining tenders, advising on tenders and preparation of contract, nominating and instructing Consultants (if any), preparing for the use of the Contractor two copies of the contract drawings, specification, or other particulars and such further details as are necessary for the proper carrying out of the works, giving general supervision as defined in the Conditions of Engagement, issuing certificates for payment, and certifying accounts, exclusive of the services enumerated in Clauses B.5 and B.14 the charge is to be a percentage on the total cost of all executed works as follows:—

(i) If the cost of the executed works exceeds £4,000 the percentage is 6 per cent.

(ii) If the cost of the executed works does not exceed £4,000 the percentage is 10 per cent in the case of works costing £200 graduated to 6 per cent in the case of works costing £4,000.

(iii) When work is executed wholly or in part with old materials, or where material, labour or carriage is provided by the Client, the percentage shall be calculated as if the works had been executed wholly by the Contractor supplying all labour and materials.

(iv) In addition to a percentage on the total cost of executed works, the Architect is entitled to charge in respect of all works included in the tenders, but subsequently omitted, two-thirds of the charge which would have been payable had they been executed.

2. Variations of Charges. The above Scale of Charges is subject to variation by prior written agreement between Client and Architect in respect of the following:—

(i) *Repetitive Works.* In the case of extensive works of a simple repetitive character, the charge may be reduced by one-sixth.

(ii) *Works to Existing Buildings.* In the case of works to existing buildings a higher percentage is chargeable, not exceeding twice the amount payable under the Scale for new works of the same cost, and depending upon the intricacy of the work involved.

(iii) *Special Works.* In works involving special services in respect of fittings, furniture, decorations, exhibitions, garden or landscape design, special fees appropriate to the circumstances are chargeable.

3. Partial Services. In cases where the Architect performs partial services for any reason, including the abandonment, deferment, substitution or omission of any project and/or works, or part thereof, or if the services of the Architect are terminated, the charges in respect of the services performed are as follows:—

(i) For taking Client's instructions and preparing preliminary sketch designs to illustrate possibilities of a site or cost of a scheme the charge is on *quantum meruit.*

(ii) For taking Client's instructions, preparing sketch designs sufficient to indicate the Architect's interpretation of the Client's instructions (but not in detail adequate to enable bills of quantities to be prepared) and making approximate estimate of cost, the charge is on *quantum meruit* and shall not exceed one-sixth of the percentage due under Clause B.1 or B.2 (as the case may be) on the estimated cost of such works.

(iii) For taking Client's instructions, preparing sketch designs sufficient to indicate the Architect's interpretation of the Client's instructions, and preparing drawings and particulars sufficient to enable applications to be made for Town Planning, Bye-law and/or Building Act approvals, the charge is one-third of the percentage due under Clause B.1 or B.2 (as the case may be) on the estimated cost of such works.

(iv) For taking Client's instructions, preparing sketch designs, making approximate estimate of cost by cubic measurement or otherwise, and preparing working drawings, specification, or such particulars as may be necessary for the preparation of bills of quantities by an independent Quantity Surveyor, or for the purpose of obtaining tenders, the charge is two-thirds of the percentage due under Clause B.1 or B.2 (as the case may be) on the estimated cost of such works.

(v) If the project or any part thereof is abandoned or deferred or any part omitted or substituted on the Client's instructions during the preparation of the working drawings, the charge is two-thirds of the appropriate percentage on the estimated cost of such works less a *quantum meruit* charge for bringing the working drawings and other particulars up to the stage defined in Clause B.3 (iv).

(vi) In all cases where fees are assessed on the basis of *quantum meruit* regard must be had to all relevant factors.

4. Mode and Time of Payment. The Architect is entitled to payment in stages as follows:—

(i) On the completion of sketch designs one-sixth of the total fees payable.

(ii) On the completion of the drawings and particulars sufficient to enable applications to be made for Town Planning, Bye-law and/or Building Act approvals, one-third of the total fees payable less the amounts of any payments already received by the Architect pursuant to sub-clause B.4 (i).

(iii) During the preparation of working drawings and other particulars instalments consistent with the amount of work completed by the Architect.

(iv) On completion of the said working drawings and other particulars, two-thirds of the total fees payable less the amount of any payments already received by the Architect pursuant to sub-clauses B.4 (i), B.4 (ii) and B.4 (iii).

(v) The remaining one-third of the total fees to be paid by instalments as the building work proceeds consistent with the value of the said building work as certified from time to time.

5. Services not included in the Scale. Charges assessed on the basis of *quantum meruit* in accordance with Clause B.3 (vi) shall be payable in respect of any additional services involved:—

(i) In advising as to the selection and suitability of sites. Negotiating as to sites or buildings, surveying sites or buildings and taking levels and making surveys, measurements and plans of existing buildings.

(ii) In preparing for the use of the Client special drawings in addition to working drawings, and preparing drawings for negotiations with ground landlords, adjoining owners, public authorities, licensing authorities or others.

(iii) In amending working drawings or preparing new working drawings to give effect to alterations of the Client's instructions or changes in design due to causes outside the control of the Architect.

(iv) In negotiations arising from applications for building or other licences, town planning, bye-law or other approvals, and negotiations in connection with Party Walls, Rights of Light and other easements, reservations or restrictions.

(v) Arising out of delay in building operations due to causes outside the control of the Architect.

6. Inspections and Reports. For making inspections, preparing reports or giving advice on the condition of premises, the charge is on *quantum meruit* in accordance with Clause B.3 (vi).

7. Litigation and Arbitration. For qualifying to give evidence, settling proofs, conferences with Solicitors and Counsel, attendance in Court or before Arbitrations or other tribunals, and for services in connection with litigation, the charge is based upon the time occupied, in accordance with Clause B.10.

Architects acting as Arbitrators are recommended to base their charges upon the total time occupied in dealing with a case at the rate of 3 guineas an hour exclusive of out-of-pocket expenses and other disbursements.

8. Dilapidations. For preparing schedule and settling the amount if required, the charge is 5 guineas per cent on the amount of the settlement, or on the estimated cost of complying with the Schedule. (Minimum fee, 5 guineas.)

9. Travelling Time. An additional charge may be made by prior written agreement if the work should be at such a distance as to lead to an exceptional expenditure of time in travelling.

10. Time Charges. In cases in which charges are based upon time occupied the minimum fee is 1½ guineas per hour exclusive of charges for Assistants' time.

NOTE: Clauses dealing with the following subjects are in accordance with the Schedule of Professional Charges of the Royal Institution of Chartered Surveyors and are adopted by the Royal Institute of British Architects. They are, however, in the process of revision by the Royal Institution of Chartered Surveyors. When available, copies can be obtained on application to the Secretary, R.I.B.A.

11. For Approving Plans Submitted by Lessees and Inspecting Buildings During Progress.

12. The Laying Out or Development of Estates.

13. For Land Surveying and the Preparation of Plans and Maps.

14. Preparing Bills of Quantities and Valuing Work Executed.

15. Valuation of Freehold or Leasehold Properties.

16. Work under the Lands Clauses Consolidation Act or other Acts for the Compulsory Acquisition of Property.

Book Reviews

Modern Gardens, by *Peter Shepheard.* 11 in. × 8½ in. 144 pp. incl. (120) pls. and pp. of illus. Archtl. Press. 1953. £1 16*s.*

Acknowledgment must at once be made of the quality of this volume. It is most 'handleable', being of good size and balance and having a simple and attractive binding. The papers, the types and *mise-en-page* are worth close examination, and it can be a great convenience in a book of reference to have the index at the beginning. The difference in the paper used for the printed page was no doubt the reason for bringing the index to the front, but this form of presentation might well be more generally adopted. The book is offered at a price well below the two guinea mark, which has become the accepted figure for the well-illustrated publication.

Now for the contents, which are rich indeed. Some 290 photographs have been chosen with much care, and represent work done in most European countries, in Brazil and, of course, in the United States; all are accompanied by useful but brief descriptions. Many plans and drawings are provided, and these range from incidental details, such as notices in public parks, to the landscaping of neighbourhoods. These drawings are significant for their own sake and vary considerably, some being quick and diagrammatic, others meticulous, but all show an awareness on the part of the designers of materials and forms, and a care of description that has not been cultivated by most architectural draughtsmen.

The photographs are superb, and are well disposed about the pages. No trouble has been spared to make this volume a constant delight and practical reference, but one may be tempted to skip the ten pages of introductory text. Beware of this. After enjoying the line drawings in the margins, turn to the text *before* feasting upon the illustrations, for it is essential that the author be given a chance to guide the reader among his chosen exhibits. His opening remarks are concerned with professionalism and present relations between the landscape architect, the architect and the engineer. References are made to history and stress is laid on the difference between modern architecture arising from technical advances and modern garden design, where the technique of gardening remains substantially unchanged. Much is said about the value of vegetation in its proper place and the absurdities of 'improved' plants with all that such variations imply. The demand for quick results in plant growth is another danger which is emphasised as leading to similar errors of judgment.

As might be expected, Mr. Shepheard's essay includes some remarks on the education of landscape architects and the extent to which it may be parallel with and coincidental to that of architects. Guidance is given, also, on the education of public

and official bodies, with a courteous defence of the position of Borough Engineers, in which he points out that they are more 'susceptible to polite and constructive advice than abuse' and advocates the writing of more sympathetic letters more often.

In this way the illustrations are introduced and proceed to amplify the welcome idea that the modern garden should find its inspiration in the contemporary scene and 'from gardens in which man has come to terms with nature and made her partner to his design'.

PATRICK HORSBRUGH [*A*]

Jugendbauten Unserer Zeit, by *Oskar Splett* and *Werner Wirsing*. 11 in. 268 pp. incl. pp. of illus. text illus. Munich: Hermann Rinn. [1953.] (DM.38.)

The wider dispersal of technical knowledge and the closer integration of various racial cultures has led to the emergence of many clearly defined and universally accepted building types. Examples of these types solve, each in their own way, a problem which varies little in its main factors from country to country, district to district or from site to site; and while within the type examples may vary in style, size, etc., the general pattern will be in each case fairly easily recognisable.

When one examines the examples illustrated in *Jugendbauten Unserer Zeit*, one is at first struck by the unfamiliarity of some of the seven groups in which the buildings for young people are assembled, and it is clear that in some cases these have not yet developed sufficiently to merit distinction as building types. Alternatively, some of the buildings are so unexacting in their essential requirements as to be capable of widely varying solutions which do not in any way approximate to recognisable types.

As the authors have made it clear in the introduction that schools have been omitted, on the grounds that these have already achieved individuality as types and been adequately documented and that they are concerned in this volume with those buildings which have been designed to house the more recently developed activities of young people, the above criticism is not of great importance. It is, however, necessary that one should regard the examples illustrated as diverse solutions to general problems rather than as solutions applicable to clearly stated sets of conditions.

It is accepted by the authors that modern architecture offers the most appropriate physical and spiritual environment for young people of all ages, and in the case of the boarding school a direct parallel is drawn between formality and informality in architectural design and formality and freedom in social and educational systems. It is clear however that this matter requires a wider exploration than can be expected in the work under review. Similarly the relationship between young people and the scale, size, colour and character of their environment is still to be fully investigated, and it would seem that only on these and similar considerations can a really fundamental approach to the design of buildings for youth be founded.

Once we have accepted the above limitations, the book succeeds admirably in its purpose of illustrating examples of modern buildings grouped under the headings of: Kindergarten, Children's Homes, Boarding Schools, Hostels, Youth Centres, Youth Clubs and Youth Hostels, including also a number of miscellaneous examples under a general heading.

Each section gives first a general commentary on the building problem, in which the main requirements are outlined, and some reference is made to the sociological background of the buildings under consideration. There then follow examples of existing buildings illustrated with plans, sections and photographs, and relevant information under the headings of site, planning, construction and architectural treatment. The buildings, which include examples from North and South America as well as from Europe, are all in one or other of the modern idioms and of considerable interest. One is a little surprised to find that not one work from England is included, while the disclosure of a youth centre embedded in the seventeenth floor of the *Unité d'Habitation* is equally unexpected.

The make-up of the book is good and the photographs and diagrams clear and legible, while the practice of printing the key to every plan in English as well as in German must increase its value enormously.

D. G. THORNLEY [*A*]

L'Architettura del Medioevo in Sardegna, by *Raffaello Delogu*. (Italy: Ministerio della Publica Istruzione-Direzione Generale della Artichità e Belle Arti. Architettura delle regioni d'Italia *Series* 1.) 11½ in. 282 + (1) pp. + (1) + ccxxii pls. text plans. Rome: Libreria dello Stato. 1953. L10,000.

Musei e Gallerie D'Arte in Italia 1945–1953; *Italy:* [as above]. 11¾ in. 119 pp. incl. pp. of illus. text illus. Rome: [as above]. 1953.

Both these books have been published at the instigation of the Ministry of Education in Rome, which directs the Superintendencies of Monuments, Galleries and Antiquities throughout Italy.

The mediaeval architecture of Sardinia, the subject of the first volume, is comparatively little known, for this island has never been developed to attract tourist traffic. Professor Delogu has produced a valuable survey of the ecclesiastical buildings between the 5th and 14th centuries—early Christian and Romanesque to Gothic. Although strong influences from the mainland may be traced, these buildings retain a sturdy character of their own, as have the Sardinian people themselves to this day. The book is well illustrated with key plans and photographs, and is also well indexed. Further volumes in the series will be published, dealing with the same period in other regions of Italy.

The second book describes and illustrates the post-war remodelling and rearrangement of Italian museums and art galleries, about a hundred and fifty in number. The second world war inevitably took toll of many such buildings, although fortunately their contents had usually been dispersed to places further away from military targets. Photographs are shown of a number of them, such as the Uffizi in Florence, shelltorn, the roof covering shattered and vaulted ceilings partly down; also the bombed Brera in Milan. Advantage has been taken in their reconstruction to make interesting improvements, and many others which have escaped unscathed have also been modernised, each considered carefully in relation to its particular needs. It is sad to reflect that so many tourist motor coaches pass their doors without time to stop as they tear round Italy.

R. E. E.

Histoire de l'Architecture Classique en France, by *Louis Hautecoeur*. Vol. V: *Révolution et Empire*. 1792–1815. 12 in. ix + 426 pp. text illus. Paris: Picard. 1953. (£4 4*s*.).

The French Revolution produced many noble ideals and institutions, yet never was the frivolous and childish side of its philosophy shown more clearly than in the architecture it sought to establish. Once in a position to create a democracy such as they had read of in classical literature, those newly risen to power tried to imitate all the architectural extravagances of Imperial Rome, until Napoleon eventually made the scenery a reality by occupying the stage.

Fortunately the Republican government was too impoverished to construct anything more than temporary monuments in celebration of its own existence, and although many new buildings were contemplated the authorities usually ended by painting new names on to the buildings erected by their royal predecessors. But the Convention was continually inviting, or being offered, elaborate designs for gigantic schemes intended as fitting monuments for the new golden age. Temples in honour of republican and private virtues were envisaged; plans were projected for memorials to great scientists; huge buildings for government or entertainment were proposed. Many of these designs consisted basically of vast hoardings of masonry on which were displayed the Rights of Man in carved and gilt lettering several feet high. Immensity and novelty were the confessed aims of the painter David and his friend Quatremère de Quincy who, as deputies to the National Convention, exercised a complete dictatorship over the arts. To them came all those impoverished architects of the *ancien régime* who, having neither been executed like Mique, nor able to flee abroad like many others, were only too anxious to interest the new administration in costly constructions. But it was not until the establishment of the Empire that the new theories were put into effect, and even then the number of permanent new buildings was extremely small.

It was as interior decorators that the designers of the first Empire left their most lasting mark. Although Napoleon originally showed more confidence in military engineers than in civil architects, he soon came under the influence of Percier and

Fontaine, whose gaudy arabesques were admirably suited to the temperament of a political upstart. By reverting to the tastes of the 16th century, Percier and Fontaine ignored the developments of the intervening years. It would seem as though their studies in Italy of Pompeian and Renaissance art had blinded them to the great achievements of the long succession of French architects who, whether their designs were florid or severe, had progressively brought about the perfect subordination of ornament to architectural composition.

All these changes of attitude towards the principles of design might well have proved an obstacle to an author writing a complete history of the whole of the classical period in France. Yet in this latest addition to his great work, M. Hautecoeur shows the same evenness of style, impartiality and enthusiasm as in his previous volumes. At the beginning of the 19th century the confusion of aim amongst architects was never more in evidence, yet M. Hautecoeur picks his way delicately and unerringly through this intellectual disorder, putting forward sympathetically the views of each school of thought, yet at the same time providing an objective and succinct criticism of their work in relationship to the general principles of classical architecture. The period is not as attractive as those dealt with in his second and third volumes, yet it offers many useful lessons, and it will be an important source of information to all those interested in the development of European architecture during the last century.

PETER COLLINS [*A*]

The Power and the Valley, by *Henry Billings*. 8 in. 208 pp. incl. pls. text illus. Hart-Davis. 1953. 12*s*. 6*d*.

Just over a century passed between the first proposal for Government action to make the Tennessee river navigable and the creation of the TVA. Two presidents vetoed it, anti-planning politicians fought it bitterly, and it had to persuade the tradition-clinging poor whites in the valley to co-operate; but, in spite of individualists' fears, industry and the inhabitants prospered.

Opposition helped to make the Tennessee Valley Authority a model for planners. The Americans' obsessive fear of socialism resulted in extensive decentralisation and in dependence on persuasion, not coercion. Congress had to be induced to grant money, but otherwise TVA was quite autonomous and could get things done. Its use of modern scientific and industrial methods to prevent human ignorance and the forces of nature from ruining the country may check intellectual Luddites in their denunciation of the machine age.

The Power and the Valley tells the story of this great river-basin: an expedition of settlers in 1779–80, the Civil War, floods, erosion of the soil, and finally the TVA. This account is interspersed with the story of a farming family, whose artificial dialogue and characterisation occasionally remind one of a propaganda documentary, and with woodcuts by the author which, like his statistics, provide more atmosphere than information.

Mr. Billings only claims to have written a book 'about water and about people', but he has also given clear, brief descriptions, with maps and diagrams, of dam-building, forestry, weather, soil conservation, and several more, and he has shown how planners, if their plan is good, need not impose it but can make people come and ask for it.

The Power and the Valley is only an introduction to TVA, but a readable one.

M. W.

The Bridges of Britain, by *Eric de Maré*. 9¾ in. 226 pp. incl. pls. and pp. of illus. text illus. Batsford. 1954. £2 2*s*.

The story of bridge-building, as it passes from superstition and religion through a stage of conscious architectural expression to become an exact mathematical process, is one of particular fascination to the architect, showing as it does the continued application of improving techniques and new materials to an unchanging problem. London Bridge and, in contrast, the Clifton Suspension Bridge, have histories which may be tolerably familiar and some of the unsuccessful entries for the latter competition provide a hardy architectural joke. In presenting the whole development of bridges in Britain, however, Eric de Maré covers new ground.

The responsibility for building and upkeep of bridges in the Middle Ages was an important function of various religious communities. Repairs were sometimes executed by an individual, sometimes by an abbey or masons' guild which may have constructed the bridge at its own expense or, as happened in many cases, through appropriations from local public funds. The tradition of charity towards travellers was a powerful factor in this work until the monastic orders were dissolved, but as this sense of obligation fell away and the charge became secularised, so there appear with increasing frequency in local records references to bridges becoming dangerous through long neglect.

Not all masons or builders had the tenacity of William Edwards who, at Pont-y-Pridd, developed empirically by way of two complete failures of structure a fine type of single high-arched span with circular relief bays piercing the spandrels to lighten the weight of masonry and allow for escape of flood water. In the 19th century the contractor appointed by Brunel, seeing the size of brick span proposed for the Maidenhead Railway Viaduct, took fright and asked to be released from his obligation to complete it. The bridge is still in use, the widest brick arch in the world.

The many excellent photographs in this book illustrate particularly the author's great delight in 'The Age of Greatness and the Engineer', when regional differences disappeared and a network of suspension bridges, lattice girders or such unhandsome structures as the Saltash Railway Bridge began to spread over the country. A far cry these from the first known iron bridge, of chain suspension type, built in the Yunnan province in A.D. 65.

Bridges designed by the architects of the Age of Reason provide, paradoxically, a study more of romantic ornament to the landscaped park than of an aid to greater facility in general communication. It may be that here is some moral for us to draw.

E. C. DENBY [*A*]

The Dictionary of English Furniture from the Middle Ages to the late Georgian period, by *Percy Macquoid* and *Ralph Edwards*. 2nd ed. 3 vols. 15 in. pls. + pp. of illus. text illus. Country Life. 1954. £31 10*s*.

Furniture, at least from the time of Elizabeth Tudor, has ever gone hand in hand with architecture as an exemplar of style; and, from the era of the Adam brothers and Kent, the architect as a designer of furniture has been acknowledged to have had a wide and important influence upon the trend of interior decoration. Even in modern times men of the calibre of Philip Webb and Voysey have played their part in the evolution of more recent vogues. It may therefore be surmised that every architect should, to some extent, combine with his knowledge of the queen of the arts some considerable study of period furniture and fittings.

For this reason, if no other, readers of the JOURNAL should have their attention drawn to the outstanding value of the present work, so competently written and so sumptuously illustrated.

It is close upon thirty years since, with the able collaboration of the late Percy Macquoid and a panel of distinguished experts, the present author published the first edition. During that time considerable advance has been made in connoisseurship and this new edition of so useful a work of reference was much to be desired. Much enlarged and extended in scope, the present three volumes bring the subjects treated up to date and are further enhanced in value by the profuse and splendidly reproduced illustrations which surpass, if anything, the usual Country Life standard.

Though called a *Dictionary of Furniture*, the book is considerably more than this. For a dictionary is usually thought of as a series of definitions, whereas this encyclopaedic work is a compendium of the very latest and most reliable information on practically every subject which can conceivably be grouped under the heading of Furniture; and the alphabetical arrangement makes reference to any particular item remarkably easy.

Particularly welcome to the architectural student will be the many photographs of period interiors, with their furnishings; and the biographical entries, which include the names of many who combined furniture design with architecture. In fact this is a work which will repay exhaustive study, and one which should find a place in the drawing office of every architect and aspirant to distinction as a creator of decorative style, for as Lethaby once wrote, 'all the past belongs to us as race experience'. It is ours to make use of, and

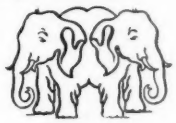
this important work may well take the place of a considerable library of reference books. C. G. E. B.

Oriel College, Oxford, by the *Oxford University Archaeological Society*. [*D. E. R. Watt*, ed.] (College guides *series*, [4].) 9¼ in. 16 pp. + (4) pls. text plan. Oxford (c/o Ashmolean Museum). 1953. 1*s.* 6*d.*

This further monograph gives, much like its predecessors, an historical text, dated semi-block plan, Loggan and E. H. New bird's-eye views (from different standpoints), and a print and photograph. The Society, interpreting its adjective 'archaeological' liberally to include historical architecture, is producing a series which, even when finished, will not rival the Monuments Commission's volume, but brings the instalments within the average purchaser's pocket.

The Things We See. 7. Gardens, by *Lady Allen of Hurtwood* and *Susan Jellicoe*. 8½ in. × 7¼ in. 64 pp. incl. pp. of illus. Harmondsworth: Penguin Bks. 1953. 5*s.*

More than a hundred delightful photographs, selected from many sources, show the infinite variety of gardening possibilities and the remarkable ingenuity of garden makers. The book deals first with gardens in and outside the house, and secondly with the planned use of open spaces for the community. It is a worthy newcomer to a generally excellent series, and should prove a lively source of inspiration to both amateur and professional.



Correspondence

STONEWORK MAINTENANCE IN HISTORIC BUILDINGS

The Editor, R.I.B.A. Journal.

SIR,—In the JOURNAL for March 1954 you publish an article by Rayson, Shore and Markham on 'Stonework Maintenance in Historic Buildings'. The whole of the article appears to be based upon the authors' statement that the object of such maintenance work must be to retain the present-day condition of the buildings and not to restore them to anything like their condition when new. While the authors are entitled to their own opinions it would be interesting to know whether their views are accepted by other architects. My own view is that each case requires judging on its merits but I venture to suggest that the following points require consideration:

1. If appearance is to be left as unchanged as possible the cleaning of stone buildings would be debarred. This is a treatment which has been applied to a number of outstanding historic buildings with apparent success and approval.

2. If restoration, by means of some stone renewal, is needed, is it really correct to keep the renewals to an absolute minimum? Such patching will inevitably result in a spotty appearance during a lengthy period of weathering of the new stone. Just when this weathering is getting to the mellow stage a further repair of the next batch of decayed work will probably be required, thus keeping the building in a perpetually 'patched-up' state. Would it not be preferable to do a wider repair in the first instance?

3. The authors refer to 'arresting' decay. Presumably they mean by applying some form of so-called preservative. Real evidence of the long-term value of such treatments is extremely difficult to find but some authorities consider that it is quite possible that over a long period the application of 'preservative' may do more harm than good.

Although each case should be judged on its merits the main issue is whether buildings should be retained in a tatty condition of old-world tourist-attracting charm or be restored to the appearance their architects intended them to have. Except in the case of complete ruins I think there is often more to be said for a completion restoration than for the retention of a scabby ashlar wall surmounted by unrecognisable corinthian capitals.

Yours faithfully,

CECIL C. HANDISYDE [*A*]

AUGUSTE PERRET

SIR,—No appreciation of Auguste Perret, however short, can afford to omit mentioning Perret the teacher. The number of his pupils, trained in his office or in the Ecole Speciale d'Architecture, may speak for itself. Among them are to be found names like Charles Edouard Jeanneret (Le Corbusier), Honnegger, Bertold Lubetkin, Beaudouin and Lods, Pierre Vago, to mention only a few.

Perret did not write a book; but he expounded his theory emphatically as a teacher and, again, as a contributor to periodicals. L'ARCHITECTURE D'AUJOURD'HUI was, before the war, something like his mouthpiece, and the articles written in this important monthly publication by his pupils Vago and Imbert are clearly *Perrétiste* in tendency.

His personality was, if anything, that of a professor; his language incisive, clear, convincing, epigrammatic. You could not listen to him without receiving one or two of his epigrams, like: *L'architecture c'est ce qui fait les belles ruines*, or: *une fenêtre c'est un homme*; or, again: *ne pas montrer un support c'est une erreur; dissimuler un support c'est un crime.*

If it is true that he has been, first and foremost, a French architect, his following is yet, to some extent, international. Nobody who had the privilege of meeting him could remain indifferent to the force of his personality, his speech, his gestures which betrayed a kind of dry charm. The way he walked: erect and with short, quick paces, his straw hat, his fisherman's beard, his walking stick, his '*cravate magnifiquement bien mal fichue*' were imitated by the most devoted among his followers.

Now that he is gone we have nothing left but the bust of Bourdelle and some good photographs to invoke his features: the broad dome of his head, his short, strong nose, his wise eyes with their twinkle of malicious humour: a head of antique dignity: the noblest, the most sculptural head I have seen.

JULIUS POSENER
Arch.Dipl.Ing.

THE SOUTH BANK

DEAR SIR,—Mr. Gordon Stephenson in his article 'The Permanent Development of the South Bank' makes the point that 'it should be a lively and attractive place day and night'.

The dominance of the office blocks in the scheme will certainly not add to the night time gaiety. Even if these buildings are floodlit they will form only a gigantic backdrop without contributing the necessary actors to an overlarge stage. It seems that there must be other buildings which have a prior claim to a site of such importance.

If a National Theatre is warranted why not a National Cinema? There are a number of films which have artistic merit and could stand revivals as do plays.

There must be at least one museum in need of better housing which would be worthy of a place in the scheme (and it certainly would not be necessary to limit the hours to the usual 10 a.m. to 5 p.m.). A library too might have a claim to a place . . . to mention only a few types of buildings which occur to me.

Yours faithfully,

HENRY WELLESLEY WESLEY [*A*]

PICTURES ON THE 'JOURNAL' COVERS

SIR,—The water colour on the front cover of your March issue is an excellent example of an architect's sketch. But as a work of art in its own right I think it leaves much to be desired —as compared, for example, with the architectural drawings of Rushbury, Walcot, or Piper. There seems to be a belief among architects that their amateur sketches are subject to a different set of standards from those of 'proper' artists. Were it not that your choice of front cover tends to foster this belief I would have no objection to it.

Yours faithfully,

R. A. SMEETON [*A*]

Editor's Note:—The few good professional painters of architecture require to be paid fees which are beyond our financial reach. Architects are, or should be, draughtsmen and we think their efforts in portraying architecture should be encouraged in a periodical which is produced solely for architects, even if the results sometimes fall short of the highest professional standards.

Living in High Blocks of Flats[1]

By Margaret Willis, B.A.

'I SHOULD HATE IT! I'd have a nervous breakdown being stifled like that with crowds of people all round me! Those great big flats are awful, ugly things.' So say very many people when the subject of flats comes up for discussion, and no other aspect of housing arouses more feeling than that of high blocks. But what of the people who are living in tall blocks of flats? Would they prefer to move to a lower floor because the height frightens them or because there are many inconveniences through being a long way from the ground? What *is* it like having a flat above the fifth floor?

This article attempts to give a description of living in high blocks of flats based on facts collected from the people who have had experience of them. It is interesting to note that the advantages are much more frequently mentioned than the disadvantages.

Most people say that the air is much fresher living high up and that it is very healthy. Although the wind often blows quite strongly round the upper floors, the inhabitants regard it as an advantage because the air is believed to be sweeter and more invigorating and therefore more healthy. Perhaps another reason is that they are living above the smoke from surrounding chimneys.

The immediate vicinity of large blocks of flats tends to be very noisy and therefore to have an upper floor flat is to escape to relative quietness and privacy. Here there is less likelihood of being disturbed by children playing and shouting, and by the constant coming and going of tradespeople and residents.

Also the view can be a source of delight, but it seems to be appreciated only when it is an interesting one with plenty of activities going on, or else a good view of natural scenery like a river. A view over rooftops, even though there are some notable buildings on the skyline, is not such an attraction. Excellent sites for tall flats would be near the Thames or around the large parks of central London, but as many will have to be built in high density areas and amidst existing development, it might be preferable to choose sites near, but not on top of, scenes of activity like a busy street, a shopping centre, sports ground or public building, as such views are more popular than those over rooftops. The 68 families questioned gave the following advantages of living high up:

Better air, healthier	47
Quiet	39
View	24
Light, sun	14
Not enclosed	9
Privacy	8
Cleaner, above smoke	5

[1] Reprinted by permission from the HOUSING CENTRE REVIEW, No. 1, 1954.

People living on the lower floors of high blocks, it was revealed, are more anxious to move up higher than the upper floor people are to move lower. To the former, going higher means better air, greater quietness including privacy, and improved light, in that order, thus confirming the advantages given by people already living higher up.

Of the few people (5 out of 68) who would like to move lower, the reasons given were the lift (two people), the children (two people) and a feeling it was too high (one person). It is perhaps surprising that only one person really found the height too much, because many people are rather frightened at first, but it seems that they get used to it. Among those who are not completely at ease at being so high are a number of wives who feel that they cannot clean their windows, one who does not go on the private balcony, and another who occasionally feels giddy when looking down.

However, one serious drawback to living above the fifth floor is the lift. When the lift breaks down (perhaps as often as once a month), it is most tiring and inconvenient to have to walk up a large number of stairs. In some blocks of flats the lift goes wrong more frequently than in others, either because too many people have to use one lift or because the children and hooligans from outside the estate misuse and damage the lift.

The 68 families gave the following disadvantages of living high up:

Lift	32
Children wander out of the estate	5
Fear of children falling from balcony or window	4
Difficulties of lift with young child	3
Others	9

Some of the older women who are at home all the day feel very cut off from the outside world when they live on the eighth or ninth floor, because they can no longer readily recognise anyone passing the flats nor wave or have a chat with a neighbour; and, especially when there is staircase access with just two flats on each floor, little social contact can be made at all. Perhaps for this reason upper floors are more popular with people who go out to work all day and who welcome the quiet and isolation on their return.

A more serious criticism of high blocks of flats comes from those families with young children. Within the flat there is the worry of the toddler opening a window and leaning out (this could be prevented if the catches were fitted with locks), or climbing over the balcony. Almost all the mothers do not allow their young children to play on the private balcony without supervision, and from the criticisms received it is suggested that the balconies should be larger to make an adequate play area, recessed to give a greater feeling of safety, opening off the kitchen so that the mother can supervise the children, and with railings for at least part of the front to enable a child to see down below without climbing up.

Mothers find it very awkward and inconvenient to carry a baby and the clothes for the pram to and from the flat and the pram sheds. Lifts should, therefore, be large enough to make it possible to take the pram up to the flat. Another advantage is that a pram is very often useful in the flat to put the baby in, as for example on the balcony.

Perhaps the most serious criticism of all is the inadequate play facilities in the vicinity of the flats. Not only is there a lack of anything to occupy the children, but it is frequently very dangerous because a small child can easily wander out of the estate into a road with traffic. The parents on the upper floors cannot reach the children quickly nor can a child reach the flat when need demands. In lower blocks of flats the mothers and children can call to each other, but this is not possible from the upper floors. It is, therefore, very important to provide good play facilities for the younger children within sight of their mothers, and also to adopt more effective measures to lessen the danger of children wandering into the roads.

The following criticisms were made by the 31 families with children under ten years of age:

Children climb on the balcony	8
Children can easily wander from the estate	7
Children lean out of windows	6
Difficulty of taking children and pram clothes down lift	4
Somewhere needed for children to play	4
Not able to reach the child quickly	3

On the whole it is thought *not* desirable to house families with young children above the third or fourth floor in high blocks. A desirable arrangement would be to have family flats on the lower floors and give them direct access into a 'family garden and playground', used solely by them and enclosed. If accommodation is provided in this way the management can more readily encourage families to move to the flats best suited to their members. The additional advantage is that neighbouring families with children of the same age often find that they have common interests. Also, those families living on the lower floors, with children of their own, are much more likely to be tolerant of the noise of children playing and, conversely, when their children grow up they will readily wish to move to quieter flats on the higher floors.

Another factor which the inhabitants of high blocks might be expected to complain about is the wind or draught. But although both wind and draughts are noticed by the majority of people, this does not appear exceptional because only a very few make any serious criticism. Also, when there is central heating any discomfort from draughts is very much less. As for wind, it is generally thought that to have fresh air

'It is generally thought that . . . fresh air is an advantage'

blowing into the flat is an advantage, although a few of the housewives find the noise rather frightening. But apart from the flat itself, there is criticism of blowy lift halls. staircases and the porches to flats on access balconies.

The access to flats can either be by an internal staircase with two flats on a landing, or by a communal balcony serving as many as twelve flats. Those who have the staircase access say that it gives them more privacy as they are very much against people walking by bedroom and kitchen windows, while others object to the communal balcony because of the gossip which they say takes place there.

Among those people who live in flats with a balcony access there are only a few that make any adverse comments although not one objects to this form of access because of the people passing by. In fact one woman says that she likes to see people going past her windows as it makes her feel less cut off from the outside world. Other people say that neighbours have the good manners not to look in. However, the similarity of balcony access to previous conditions of living for these people, as for instance the bye-law housing looking straight on to the street and the old tenement buildings with their communal facilities, probably accounts for much of the lack of criticism.

In conclusion it would seem that staircase access is definitely preferred by all those who live in flats designed in this way because it is more private. The access balcony is not objected to, however, by the majority of those people who use one, and its advantage is that it can more easily foster social contacts among neighbours. Perhaps the advantages of both staircase and balcony access might be combined by providing for four flats on a short access balcony; two of these dwellings would not have any windows looking on to it. In the case of 'point blocks' there can, of course, be four flats opening off one internal landing.

The attitude of people who live on an estate is often determined by the sort of neighbours they have, so that small groupings of people can become very important. Most people tend to be reserved in

'One serious drawback is the lift'

their social contacts, saying that it is not policy to be too friendly with neighbours, but they would like to know them sufficiently well to be able to ask for help if an emergency arose. Bearing this in mind, the access balcony and to a lesser extent the access staircase provide what could, in time, become a pleasant social grouping of people who, while not overtly very friendly, nevertheless class each other as 'nice people' and like being neighbours.

Drawings by S. C. Grenville Cook [Student]

Practice Notes

Edited by Charles Woodward [*A*]

IN PARLIAMENT. Structural steel—Suggested Reference to Monopolies Commission. The Minister of Works was asked if he was aware that firms supplying structural steel were quoting identical tenders to public authorities; if he had studied a recent case in Lancashire involving public money, the details of which had been supplied to him; and whether he would take steps to deal with this ring either by referring the question to the Steel Board or by recommending a reference to the Monopolies Commission. Sir D. Eccles replied that he was aware that firms fabricating and erecting structural steel frequently quoted identical prices, as had apparently happened in the Lancashire case referred to. It had been the practice for many years for Government contracting departments to ensure, by costing and otherwise, that only a fair and reasonable price was paid for this work. The price of fabricated structural steel was not a matter for the Steel Board. He added that the President of the Board of Trade, who was well aware of the position, would bear it in mind when further references to the Monopolies Commission were under consideration. (2 March 1954.)

Private Building Licences. (Issue). In answer to a question the Minister of Works replied:—As an administrative economy my Department will from 1 April this year issue the building licences now given by local authorities for private houses of not more than 1,500 sq. ft. in England and Wales. Local authorities will still have discretion to issue licences for houses over 1,500 sq. ft. in area and for housing maintenance and conversion work above the free limit. The arrangements in Scotland are still under consideration. (23 March 1954.) (*Note*. After 1 April applications for licences to build houses up to 1,500 sq. ft. should be addressed to the regional licensing offices of the Ministry of Works.)

Building Costs.—In answer to a question the Parliamentary Secretary to the Ministry of Works said:—I estimate the cost of the average three-bedroom house built in 1953 at £1,385, of which £457 (33 per cent) represents labour and £790 (57 per cent) materials. (9 March 1954).

Building Costs.—In answer to a question the Minister of Works said that the comparative figures for costs of all building work including repairs and maintenance, based on 100 for 1948, are as follows:—

1950	104
1951	121
1952	131
1953 (provisional) ..	129

(29 March 1954.)

MINISTRY OF HOUSING AND LOCAL GOVERNMENT. Postponement of new Valuation Lists. Circular 29/54 dated 16 March refers to an Order made by the Minister postponing the coming into force of the new valuation lists until 1 April 1956. The reason is that it is considered essential to introduce certain improvements in the statutory arrangements, notably the simplification of the appeals procedure, and there is no time for the necessary legislation this session.

There is also the question of a new method of assessing Gas Boards which also awaits legislation.

Provision of Playgrounds for blocks of flats. Refuse disposal in flats. Circular 21/54 dated 16 March refers to two reports dealing with the above matters. The report dealing with Playgrounds is published by

the National Playing Fields Association, 71 Eccleston Square, London, S.W.1, price 2*s.* 6*d.* net.

The report dealing with Refuse Disposal is obtainable from the Institute of Housing, 37/38 Strand, London, W.C.2, price 2*s.* 6*d.*

Service Camps in use for Housing. (Circular 25/54). The closure as soon as possible of all Service camps in use for housing other than those which have been acquired by local authorities is recommended in the final report of the Working Party on Requisitioned Properties in Use for Housing. Camps should be cleared in an order of priority corresponding to their degree of undesirability for housing use whether on public health, social or planning grounds; and that co-operation of the Regional Officers of the Ministry of Health should be sought in view of the important assistance which the Welfare Authorities (County and County Borough Councils) may be able to give.

The Minister has accepted the Working Party's recommendations and has asked the local authorities concerned to consider them in preparation for an approach by his Principal Regional Officer.

The Report is obtainable at H.M. Stationery Office, price 4*d.* net.

Housing Estate Roads. Protection of road formations. Circular 23/54 dated 23 March addressed to housing authorities in England and Wales is as follows:—

1. I am directed by the Minister of Housing and Local Government to draw the Council's attention to Road Note No. 17, issued by the Road Research Laboratory, entitled 'Protection of Subgrades and Granular Bases by Surface Dressing', a copy of which was recently sent to you by the Laboratory.

2. Many soils, especially clay soils, are sensitive to changes in moisture content. When the preparation of soil formations has to be done in advance of laying the road foundation there is always a chance that weather conditions may cause undue softening of the subgrades or excessive drying. A convenient way of preventing this happening is to spray the prepared formation with a suitable bituminous or tar coat and blind with a single-sized aggregate. This has the effect of maintaining the moisture content of the subgrades at or near the level of its natural value. Subsequent rainy or drying weather will not cause the prepared formation to soften or crack provided the directions contained in Road Note No. 17 are carried out.

3. Protection of the subgrade thus provides an insurance against the possibility of having greatly to increase the thickness of construction required to produce a stable road. It is therefore recommended as an economical technique for road construction on all soils likely to be adversely affected by weather.

FIRE HAZARD OF INTERNAL LININGS. This is a special report No. 22 in the series of National Building Studies published by H.M. Stationery Office, price 1*s.* 3*d.* net. The preface states that when used in certain ways some kinds of building boards can contribute to the rapid spread of fire in buildings, and it is essential to know where they may be used with safety. The report describes the result of experiments that have been carried out to show how common types of board might be expected to behave in actual fires. The conclusions are given in a form that is designed to help in answering questions that arise when considering the use of these materials.

BUILDING WAGES. The Joint Conciliation Committee of the Heating, Ventilating and Domestic Engineering Industry announce that an increase in wages of 1*d.* per hour has been awarded to craftsmen and mates covered by the Four Party Agreement. The increase came into operation on 1 February 1954.

HEIGHT OF BUILDINGS IN LONDON. The L.C.C. General Powers Bill now before Parliament proposes to raise the maximum height to which new buildings may be built without the consent of the L.C.C. from 80 ft. to 100 ft. The relevant clause in the Bill seeks to amend the London Building Acts, 1930–1939. The proposed amendment will also allow an addition up to a limit of a further 10 ft. of a tower or turret for ornamental purposes or for accommodation for stairs, lift gear or water tanks.

THE MEANING OF 'BUNGALOW'. In the case of Ward *v.* Paterson (1929) 2 Ch. 396, the word 'bungalow' was construed by the Court as follows:—

'The only question I have to determine is what is the meaning of the word "bungalow" . . . It is not an ordinary English word. It is an Indian word, or rather a word of Indian derivation, and is obviously used in this conveyance as indicating a building which has some particular architectural features. It is a word of art; and I must find out its meaning from the evidence of persons acquainted with that art. . . . The defendant's experts have . . . given a definition which I accept—namely, that a bungalow is a building of which the walls, with the exception of any gables, are no higher than the ground floor, and of which the roof starts at a point substantially not higher than the top of the wall of the ground floor, and that it does not matter in what way the space in the roof of the building so constructed is used.'

BILL TO ALTER A MISTAKE ON A PLAN. The Minister of Agriculture is to introduce a Bill to correct a mistake in the colours used on a plan marking the boundaries of Ham Common. The draughtsman coloured green, instead of pink, three-quarters of an acre of the gardens of Wilmer House, the effect of which was to add this amount to the green-coloured Common. The Bill states that the land in question was enclosed by a wall and was part of Wilmer House garden before the mistake was made in the colouring of the plan in 1901.

LAW CASES

Damage by Fire. Builder Found to be Not Liable. A recent court case in which a claim was made against a builder in respect of damage caused by fire which broke out on premises on which he was working is referred to in the latest Information Service Circular issued by the LMBA. The Circular states:—

Notification has been received from the NFBTE of a recent case, James Archdale and Co., Ltd., *v.* Comservices, Ltd., which will be of considerable interest to builders. It expressly confirms the intention behind the wording of Clauses 14(*b*) and 15(*a*) and (*b*) of the RIBA Standard Form of Contract, namely that the employer shall, as regards loss or damage by fire to the existing structures, their contents and the works and all unfixed materials and goods, except plant, tools and equipment, bear the sole risk.

The facts of the case were, briefly, that the contractor was employed to carry out certain redecorations to an existing building. While the work was being performed, fire broke out on the premises and damage resulted. The cause of the fire was found to be the negligence of the contractor's servants. The employer therefore claimed against the contractor for the amount of the damage caused, but both at the trial and in the Court of Appeal it was held that the contractor was not liable for the damage.

Lord Justice Denning put the issue very clearly in his judgment in the Court of Appeal when he said: 'The contractor is obliged under the contract to insure against the risk of injury to persons. He is also to insure against the risk of injury to property . . . loss or damage by fire is in a category by itself. The employer is to insure against the risk of fire. When viewed in relation to insurance it is quite plain that the risk of fire is on the employer, however it is caused (even though caused by the negligence of the contractor's servants) and he is the person who must insure against it.' (1954. 1 All E.R. 210.)

Car Shelter in Front Garden. This case under the London Building Act 1930 was quoted in the February issue of the JOURNAL, and concerned the meaning of the word 'structure' in section 22.

The Court held that 'structure' in the section could not be construed as being of the same kind or nature with 'building' because it was obvious that the Act was meant to include something wider than a building. The test to be applied was whether a man of the world, looking at the object, would say that it was a structure, and the Court must be guided by the intention with which the object was made. Had it been a temporary object it might not be a structure; but the shelter was put up to provide the house with a substitute for a garage and with the object of being permanently there. From the common-sense point of view it was a structure and, accordingly, within section 22. (1954. 1 All E.R. 389. London County Council *v.* Tann.)

Review of Construction and Materials

This section gives technical and general information. The following bodies deal with specialised branches of research and will willingly answer inquiries.

The Director, The Building Research Station, Garston, near Watford, Herts.
Telephone: Garston 2246.

The Officer-in-charge, The Building Research Station Scottish Laboratory, Thorntonhall, near Glasgow.
Telephone: Busby 1171.

The Director, The Forest Products Research Laboratory, Princes Risborough, Bucks.
Telephone: Princes Risborough 101.

The Director, The British Standards Institution, 2 Park Street, London, W.1.
Telephone: Mayfair 9000.

The Director, The Building Centre, 26 Store Street, Tottenham Court Road, London, W.C.1.
Telephone: Museum 5400 (10 lines).

The Director, The Scottish Building Centre, 425–7 Sauchiehall Street, Glasgow, C.2.
Telephone: Douglas 0372.

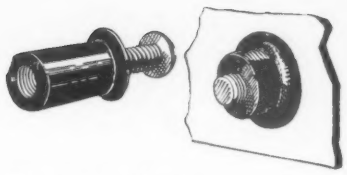
New Boiler Types. In last month's JOURNAL mention was made of the thermostatic control on the Crane boiler, designed to banish the uncertainties of manual regulation of the heat output, and we follow on with a description of two other new and similar appliances.

The Ideal No. 1 Autocrat Boiler. In this boiler the control knob is placed on the front; it regulates the temperature of the water and the rate of fuel consumption. A graduated concealed damper is housed in the smokehood to control the draught in cases where unusual or extreme conditions occur. A rocking mechanism in the grate operates the two bars separately and includes a dumping device for clearing all the incombustible contents of the firebox into the ashpan. The makers claim that operation of the thermostatic knob will control the rate of burning from ½ lb. to 3 lb. of fuel per hour. Only two stokings a day are necessary. Messrs. Ideal-Standard Ideal Boilers and Radiators Ltd., Ideal House, Great Marlborough Street, London, W.1.

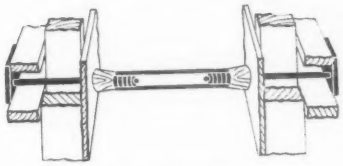
The Glow-worm A25 Boiler. This has a large fuel capacity, requiring only two fuellings in 24 hours. The thermostatic control knob is placed at the top of the boiler. The primary air and chimney damper controls incorporate a draught stabiliser to keep the chimney draught steady. The rotating grate includes a dumping mechanism, and a small but useful point is that the ashpan has a handle at the top for easy carrying, and clearing the grate should be necessary only every other day. Messrs. Glow-worm Boilers, Ltd., 22–24 Buckingham Palace Road, London, S.W.1.

Fixing Devices. In the September 1947 JOURNAL there was an illustrated article describing various fixing devices; since then new ones have been brought on the market. One of these is the Rawlnut, intended for the fixing of pipe brackets and carriers, coat hooks and similar articles to backgrounds such as hollow tubes, plastic panelling, glass or other material where the fixing has to be done from the front.

The Rawlnut is a cylinder of tough rubber with a flange at one end and a tapped nut bonded into the other end. A hole is bored in the 'wall' to which the fitment is to be attached and the cylinder is pushed in up to its flange. The fixing hole in the fitment is then aligned over the flange and a special screw is passed through and engaged with the bonded nut. Turning the screw draws in the nut and therefore the rubber cylinder is squeezed against the back of the wall and bulges to make a tight and shake-proof fixing. Various sizes are made to suit different thicknesses of wall.



The Rawlnut fixing device



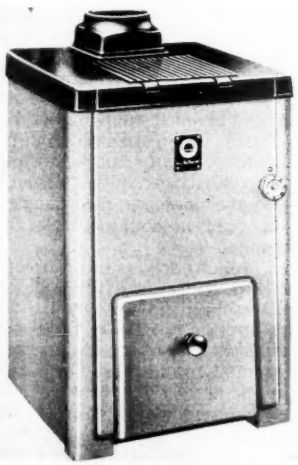
The Rawltie for shuttering

Another device, called the Rawltie, is useful for concrete shuttering as it will keep the two faces the correct distance apart. The Rawltie unit consists of two steel rods connected to a nut at their ends, two hardwood cones and two long bolts. Holes are bored opposite each other in the two faces of the shuttering and the bolts are passed through the cones and screwed into the nuts, the bolt heads and washers being packed out as necessary. When the concrete has been poured and has set the bolts are withdrawn and can be used again and again. The object of the cones is to prevent the metal ends of the Rawltie being flush with the finished face of the concrete. The ties are made in lengths from 3 in. to 33 in. by increments of 3 in., and as the cones are made in lengths of 1 in., 1½ in., 2 in. and 2½ in. the internal faces of the shuttering can be kept at distances apart from 5 in. up to 38 in. The device acts as a stiffener as well as a tie.

Another device, on much the same principle, is the Rawlhanger; it is in the shape of a U, the nuts being fixed to the ends. The device can be slung over R.S.J.s. and the shuttering bolted up to the nuts; this allows a floor slab to be cast without vertical strutting of the formwork, thus keeping the space underneath clear of obstruction.

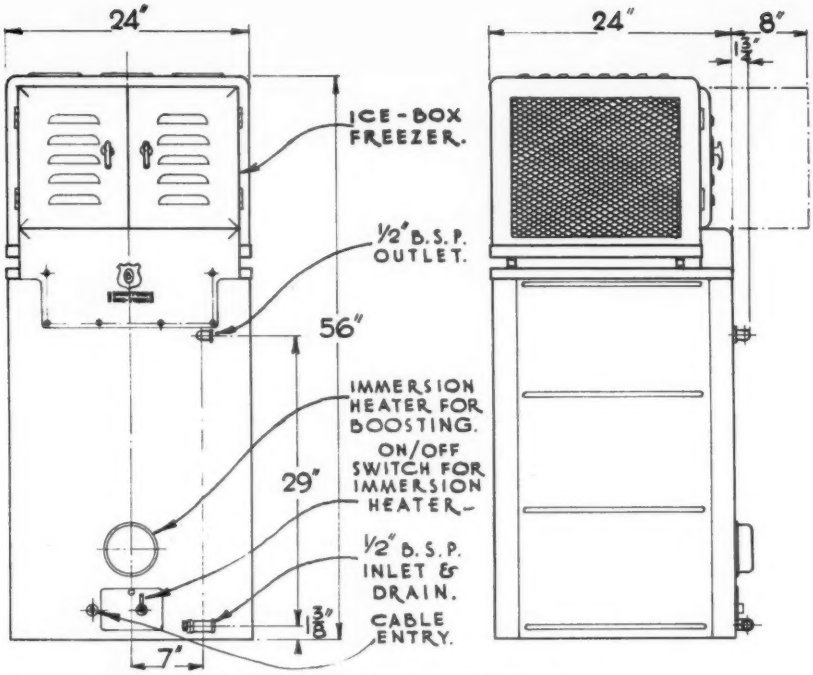
These are a few of the devices manufactured by the Rawlplug Co. Ltd., of Cromwell Road, London, S.W.7.

The General Motors Fire U.S.A. In our account of this fire, published in the February JOURNAL, we stated that the water-proofing medium of the roof was asphalt and that this contributed to the spread of the fire. The National Employers Federation of the Mastic Asphalt Industry point out to us that this material was not what is generally known as mastic asphalt in this country. Rock mastic asphalt contains a high proportion of powdered limestone, which makes it far less combustible than the tar and bitumen compounds used on the General Motors building. Rock mastic asphalt does not support com-



The Ideal No. 1 Autocrat boiler

The Glow-worm A25 boiler



Dimensional details of the Brentford Duo-therm domestic heat pump

bustion. The inference is that had the roof in question been covered with rock mastic asphalt, the spread of the fire would have been very much less. Not all 'asphalt' roofs in this country, however, are of rock mastic.

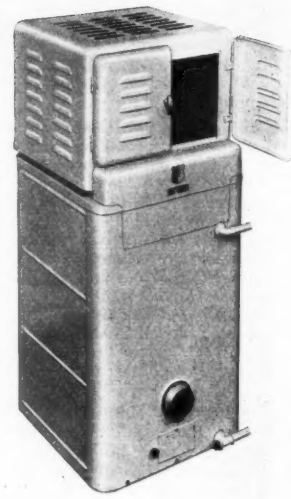
The Brentford Duo-therm. A Domestic Heat Pump. Although it is only comparatively recently that the heat pump has come into general notice it is far from being a new idea, for the principle was propounded by Carnot in 1824 and some thirty years later Professor William Thomson (Lord Kelvin) suggested that the heat generated by a compressor might be used for warming buildings. Working models were made, but for many years remained only of laboratory interest. In 1939 a heat pump was installed in the Zurich Town Hall and in 1945 the Norwich Corporation Electricity Department was heated by this means, more or less as an experiment. It is estimated that the plants installed in Switzerland may save 60,000 tons of coal a year.

In our everyday experience we have all exemplified the basic principle of the heat pump, for who has not noticed how hot a pump gets when blowing up a bicycle tyre; this is because the energy expended in compressing the air in the pump is converted into heat. In the case of the tyre the heat is uselessly dissipated; in the heat pump it is usefully harnessed and can be employed to warm water.

From the economical aspect the important point in a heat pump is that an output of heat can be gained by the use of less fuel than would be required to produce the same output by ordinary combustion methods, such as a solid fuel boiler, and the ratio of useful heat produced to the power absorbed (measured in heat units) is known as the coefficient of performance.

For warming buildings the necessary plant is rather large, but if the purpose is restricted to heating water for ordinary domestic use the installation can be more compact, and the Duo-therm domestic heat pump is an example. This appliance not only heats the domestic water but also keeps cool the compartment in which it is placed, say a pantry or larder; this it does at less expenditure than would be spent on warming the water the usual way. From tests it is estimated that the running cost of the electricity consumed is half, or even less, of what it would be to heat the water by electricity alone, and in addition refrigeration is supplied without additional expense.

The Duo-therm consists of an enamelled steel cabinet lagged with cork granules; the lower part contains a 30-gallon water tank and the various components forming the heat pump; the upper part is a louvred compartment housing an ice box; cold air passes out of the louvres to cool the pantry or larder in which the appliance is placed. There are only two water connections, the cold feed from the cistern and the expansion pipe from which branches go to the taps. The refrigerant is 'Arcton 6' gas operating in a closed circuit, and as this gas is non-poisonous, non-inflammable and has no smell persons would not suffer any ill effects if by mischance a break in the tubing occurred. This closed circuit needs 'topping up' only at long intervals, perhaps every two years or more. The compressor is run by an electric motor thermostatically controlled and an immersion heater is provided as a booster if required. No flue is needed—a point of economical importance.



The Brentford Duo-therm heat pump

The JOURNAL inspected the apparatus installed for demonstration purposes in the premises of Messrs. Brentford Electric Ltd., who are the manufacturers; it was placed in a compartment of 150 cu. ft. representing a larder and hot water was delivered to a sink nearby at a temperature of about 140° F. The supply of hot water is about 50 gallons a day under ordinary conditions of usage. The coefficient of performance is about 2, which means that, in terms of heat units, two units are given out for an energy expenditure of one.

This compact application of the heat pump to the requirements of an ordinary house opens up possibilities of saving fuel and at the same time providing hot water and a cool larder.

More detailed information can be obtained from Messrs. Brentford Electric Ltd., Kidbrooke Park Road, Kidbrooke, London, S.E.3.

Timber Connectors. Messrs. MacAndrews and Forbes Ltd. have issued Supplement No. 1 to their *Design Manual for Timber Connector Construction*. When the manual was first published only the 2½-in. diameter Teco double-bevelled split-ring connector was obtainable in Great Britain, but now a 4-in. diameter connector can be had, and the supplement gives the essential design data relating to the new size. The supplement should be read in conjunction with the design manual.

Messrs. MacAndrews and Forbes say that the 4-in. split-ring will enable architects and engineers to simplify the design of highly-stressed joints in large timber structures, such as roof trusses, and lead to further economies and greater efficiency in timber jointing.

Those interested may obtain the design manual, and the supplement, free by applying to the firm at 2 Caxton Street, London, S.W.1.

Notes and Notices

NOTICES

One Hundred and Sixteenth Annual General Meeting, Tuesday 4 May 1954 at 6 p.m. The One Hundred and Sixteenth Annual General Meeting will be held on Tuesday 4 May 1954 at 6 p.m. for the following purposes:—

To read the Minutes of the Fifth General Meeting held on 2 March 1954; formally to admit new members attending for the first time since their election. To receive the Annual Report of the Council and Committees for the official year 1953–54. (Copies of the Annual Report were sent to members on 20 April.) To nominate two members as Hon. Auditors for the ensuing year.

(Light refreshments will be provided before the meeting.)

Lecture, Tuesday 18 May 1954 at 6 p.m. On Tuesday 18 May 1954 at 6 p.m. Mr. Ian Leslie, O.B.E. [*Hon. A*] and Mr. Ian McCallum [*A*] will read a paper on 'Architectural Criticism'.

(Light refreshments will be provided before the meeting.)

British Architects' Conference, Torquay, 26–29 May 1954. All members and Students of the R.I.B.A. and of the Architectural Association and the Allied Societies are cordially invited to attend the Conference to be held in Torquay from 26 to 29 May. Full particulars and the application form were enclosed with the March issue of the JOURNAL.

It will greatly facilitate the arrangements if all who propose to attend the Conference will complete the application form and return it to the Secretary, R.I.B.A., as early as possible, but in any case *not later than 3 May*.

Special attention is drawn to the note on page 4 of the programme and to the necessity of reserving hotel accommodation without delay.

R.I.B.A. Kalendar 1954–55. The next issue of the Kalendar will be published in the autumn and members and Students wishing to notify new addresses, etc., for publication in that issue should do so as soon as possible. The last date for receiving changes for inclusion in the new Kalendar will be 31 May for those in the United Kingdom and the Republic of Ireland and 30 June for those overseas.

New Building Materials and Preparations. The attention of members is drawn to the fact that information in the records of the Building Research Station, Garston, Watford, Herts, is freely available to any member of the architectural profession, and architects would be well advised when considering the use of new materials and preparations of which they have had no previous experience, to apply to the Director for any information he can impart regarding their properties and application.

CURRENT R.I.B.A. PUBLICATIONS

The following is a list of the main R.I.B.A. publications with their prices.

Agreement, Forms of
Form of Agreement for General Use between a Building Owner (including a Statutory Authority) and a Firm of Architects.
Form of Agreement between a Local Authority and a Firm of Architects for Housing Work.
Form of Agreement between a Local Authority and a Firm of Architects for Multi-Storey Flats.
Form of Agreement between the Promoters and a Firm of Architects appointed as the Result of a Competition.
Price 6*d*. per form (inclusive of purchase tax). Postage 3*d*.

Architect and His Work, The
Price 6*d*. Postage 3*d*.

Before You Build. Free.

Certificates, Architects', Form Prepared by the Practice Committee
Copyright. Book of 100 Certificates.
Price 17*s*. (inclusive of purchase tax). Postage 1*s*. 2*d*.

Contract, Form of Agreement and Schedule of Conditions
For use with quantities: 1939 revised 1952. Copyright.
For use without quantities: 1939 revised 1952. Copyright.
Price 2*s*. 2*d*. per form (inclusive of purchase tax). Postage 3*d*.
Adapted for the use of Local Authorities, for use with quantities: 1939 revised 1952. Copyright.
Adapted for the use of Local Authorities, for use without quantities: 1939 revised 1952. Copyright.
Price 2*s*. 4½*d*. per form (inclusive of purchase tax). Postage 3*d*.
Fixed Fee Form of Prime Cost Contract for use in the repair of war-damaged property, 1946 revised 1950. Copyright.
Price 2*s*. 2*d*. (inclusive of purchase tax). Postage 3*d*.
Cost Plus Percentage Form of Prime Cost Contract for use in the repair of war-damaged property: 1946 revised 1950. Copyright.
Price 2*s*. 2*d*. (inclusive of purchase tax). Postage 3*d*.

Examination, Intermediate, Questions Set At
Price 1*s*. per examination. Postage 3*d*.

Examination, Professional Practice, Questions Set At
Price 6*d*. Postage 3*d*.

Examinations, Final and Special Final, Questions Set At
Price 1*s*. per examination. Postage 3*d*.

Forms of Articles of Pupilage
Copyright. Price 1*s*. 8*d*. (inclusive of purchase tax). Postage 3*d*.

Membership of the R.I.B.A.
Particulars of the Qualifications for Associateship.
Price 2*s*. 6*d*. Postage 3*d*.

Party Wall Notice Forms, for Use Under the London Building Act
Form A—Party Structures.
Form B—Party Fence Walls.
Form C—Intention to Build within Ten Feet and at a lower level than the bottom of the foundations of adjoining Owner's Building.
Form D—Intention to build within Twenty Feet of the adjoining Owner's Independent Building and to a depth as defined in Section 50 (1)(*d*).
Form E—Party Walls and Party Fence Walls on line of Junction of adjoining lands.
Form F—Walls or Fence Walls on Building Owner's land with footings and foundations projecting into adjoining Owner's land.
Form G—Selection of Third Surveyor.
Price 7*d*. per form (inclusive of purchase tax). Postage 3*d*.

Prizes and Studentships
Price 2*s*. 6*d*. Postage 3*d*.

BOARD OF ARCHITECTURAL EDUCATION

R.I.B.A. Intermediate and Final Examinations. The Council of the R.I.B.A. have decided that as from 1 July 1954 candidates for the Intermediate and Final Examinations shall be required to have reached the minimum age of 19 and 21 respectively by the first day of the examination at which they present themselves.

This regulation supersedes the existing regulation whereby candidates were required to have reached the appropriate minimum age limit by the closing date announced for the receipt of applications for admission to the particular examination at which they wished to present themselves.

R.I.B.A. Final and Special Final Examinations. Relegated Candidates. The Council have decided that as from 1 January 1955 candidates who do not pass in at least two of the following subjects of Part 2—B1 (General Construction), B2 (Theory of Structures), C (Hygiene and Specialised Requirements of Building) and D (Specifications and the Properties and Uses of Building Materials)—will be required to take those four subjects again at a subsequent sitting.

R.I.B.A. Maintenance Scholarships in Architecture. The R.I.B.A. offer for award in July 1954 the following maintenance scholarships in architecture, tenable from 1 October 1954:—

The Howe Green 4th and 5th year Maintenance Scholarship of £40 to enable students who have passed the Intermediate stage to complete an approved course at a school of architecture recognised for exemption from the R.I.B.A. Final Examination.

One R.I.B.A. Houston Maintenance Scholarship of a maximum value of £125 per annum. It is available for any stage of training at a recognised school of architecture and is awarded in the first instance for one year. It is renewable from year to year. (The Houston Maintenance Scholarships are for the purpose of providing educational and maintenance allowances for the sons of architects and artists, who may be, or at the time of their death were, in impecunious circumstances, whether such architects or artists be alive or dead.)

The Hartley Hogarth Maintenance Scholarship to provide grants towards the fees for architectural study at a recognised school of architecture is available to any student or students who produce satisfactory evidence of having been resident in the Borough of Keighley for a period of ten years prior to 1 October of the year in which the application is made. Its value will be that of the fees of the school of architecture selected.

The Artists' General Benevolent Institution Maintenance Scholarship of a maximum of £125 per annum is available in the first instance for one year and renewable for two further periods of one year each. (The Artists' General Benevolent Institution Maintenance Scholarship is open to orphans or sons or daughters

of an architect in private practice or an artist. Applications for this scholarship must be made by *1 June 1954*, to the Secretary to the Board of Architectural Education, R.I.B.A., 66 Portland Place, London, W.1.)

The scholarships are intended to enable promising students, whose parents or guardians have not the necessary means, to attend approved courses at the schools of architecture recognised for exemption from the R.I.B.A. examinations. Students already taking such a course are also eligible to apply for a scholarship. The scholarships are available only for students who are British subjects by birth or naturalisation.

The value of the scholarship up to the limits stated will depend on the financial circumstances of the parents or guardians of the candidate. The parents or guardians will be required to furnish particulars on the proper form of their financial position.

Applications for the scholarships (in accordance with the regulations for applications) must be made to the Secretary to the Board of Architectural Education, R.I.B.A., 66 Portland Place, London, W.1. The closing date for the receipt of applications, duly completed, is *29 June 1954*, except in the case of the Artists' General Benevolent Institution Maintenance Scholarship, the closing date for which is *1 June 1954*. The awards will be announced towards the end of July 1954.

The R.I.B.A. Prize for Art Schools and Technical Institutions with facilities for the instruction of intending architects (which are included in the list of such schools contained in the R.I.B.A. Membership Pamphlet). The R.I.B.A. offers annually a prize of £10 in books for competition between students of the schools of art and technical institutions with facilities for the instruction of intending architects which are included in the list of such schools contained in the R.I.B.A. Membership Pamphlet.

The Principal of each School of Art or Technical Institution may nominate not more than one student to take part in the competition. This student may be one who has attended the previous session but has left school at the end of the previous term. The Principal must submit on behalf of the student he nominates one portfolio of drawings prepared for the R.I.B.A. Intermediate Examination Testimonies of Study, 3A Constructional Design, 3B Sketch Designs and 3C Measured Drawings, or the equivalent of those drawings prepared in a 'listed' school in the R.I.B.A. list of schools for full-time preparation for the R.I.B.A. external examinations.

The portfolio submitted in competition for the prize should be sent to the Secretary of the R.I.B.A. by the Principal of the student's school and not by the student. Each drawing must be signed by the student, and the name and address of the school must be clearly stated. The drawings must be accompanied by a declaration signed by the Principal, to the effect that they are the student's own unaided work.

The jury will consist of the officers of the Board of Architectural Education.

All work must be sent so as to reach The Secretary, R.I.B.A., 66 Portland Place, London, W.1, by 1 September annually.

Prizes for Public and Secondary Schools. The R.I.B.A. offers annually for competition between boys and girls of Public and Secondary Schools prizes totalling £10 10*s*. 0*d*. in value for the encouragement of interest in architecture. The competition is *not* open to those who have left school before the end of the summer term immediately preceding the closing date for entries.

(*a*) A prize will be given for the best original essay of not more than 1,000 words illustrated by sketches dealing with a building or group of buildings with which the competitor is personally acquainted. It should be understood that the prize is not given for illustrations but for an illustrated essay. In any case no illustration may exceed foolscap size. The essays should indicate personal thought and judgment and should not be guide-book description of a building. The competitors should choose a building they like and should state their reasons for liking it.

(*b*) A prize will be awarded for the best sketches or scale drawings of a building or part of a building in pencil, ink or colour. The sketches or scale drawings must be drawn from the original. Copies of photographs or other illustrations are not submissible. If measured drawings of buildings are submitted they must be accompanied by a statement that the buildings have been measured and drawn by the competitor. The original survey notes made on the site, from which the drawings were made, must also be submitted with the finished drawings. The size of each sheet must not exceed 30 in. by 22 in. The quality of the building will be considered in awarding the prize. The name and position of the building should be stated.

The work submitted in competition for these prizes should be sent flat, not rolled and not folded, to the Secretary, Royal Institute of British Architects, 66 Portland Place, London, W.1, by the *Headmaster or Headmistress of the competitor's school and not by the competitor*.

Drawings and essays must be signed by the competitor and the name and address of his or her school clearly stated, and must be accompanied by a declaration to the effect that the essay and/or drawings are his or her own unaided work. The competitor's age must also be stated.

Jury, The Hon. Godfrey Samuel [*F*], Mr. R. W. Paine [*A*], Mr. J. S. Walkden [*F*].

For the competition in 1954 all work must be sent so as to reach the Secretary R.I.B.A., 66 Portland Place, W.1, by 1 October 1954.

COMPETITIONS

Competition for the Equipment of Railway Installations: Grand Duchy of Luxemburg. Notice has been received from the Secretary-General, International Union of Architects, of an architectural competition being promoted by the Government of the Grand Duchy of Luxemburg for the equipment of railway installations. Despite representations made by the International Union, the conditions of this competition are not in accordance with the Regulations for International Competitions in Architecture and Town Planning approved by the International Union, **and members and Students R.I.B.A. are accordingly warned not to take part in this competition.**

Dow Prize Competition. The Illuminating Engineering Society offers a prize which will be awarded to the winners of a competition intended to encourage collaboration between students of illuminating engineering or of those branches of engineering concerned with illumination, and students in other fields in which applied lighting plays an important part. While entries from individuals are not excluded, the competition is primarily intended for students (under the age of 26) working in collaboration. The competition will be set and judged by a panel of assessors appointed by the Society in co-operation with the R.I.B.A. and the Institution of Electrical Engineers.
Premium: £75 (and a certificate to each member of the winning team).
Certificates of commendation will be awarded to any other entries of outstanding merit.
Last day for submitting designs: 15 November 1954.

Forms of application and instructions as to the form which entries should take may be obtained from the Secretary of the Illuminating Engineering Society, 32 Victoria Street, London, S.W.1.

COMPETITION RESULTS

Proposed County Secondary School, Falmouth. Messrs. E. D. Lyons, L. Israel and T. B. H. Ellis [*A*/*A*/*A*].

Church at Sighthill, Edinburgh

1. Mr. A. M. Doak [*A*] and Mr. A. R. Whitelaw [*A*].
2. Mr. C. A. Hope [*A*].
3. Mr. R. S. Morrison [*A*].
4. Mr. A. R. Taylor [*A*].
5. Mr. E. W. Hall [*A*] and Mr. M. T. D. MacMichael [*A*].

ALLIED SOCIETIES

Changes of Officers and Addresses

Chelmsford and District Chapter, Essex, Cambridge and Hertfordshire Society of Architects. Chairman, S. E. Bragg [*A*]. Hon. Secretary, N. P. Astins [*A*], 20 Shrublands Close, Chelmsford.

Northern Architectural Association, Cumberland Branch. Annual Dinner Dance. The annual dinner dance of the Cumberland Branch of the Northern Architectural Association was held in the Silver Grill, Carlisle, on Thursday 4 March. Before the dinner the guests were received by the Branch Chairman, Mr. H. Irving Graham [*L*] and Mrs. Graham. The Guests of Honour were the Mayor and Mayoress of Carlisle, Alderman A. C. R. Punnett, J.P., and Mrs. Punnett; and the High Sheriff of Cumberland, Mr. R. L. Dickinson and Mrs. Dickinson.

The dangerous state of the roads throughout the county due to extremely severe weather conditions did not affect the attendance. Among the 200 members and guests present were local representatives of societies connected with building, engineering and surveying.

A total sum of £65 1*s*. was raised during the evening for the Architects' Benevolent Society, by means of a 'tombola' for prizes generously given by firms associated with the building industry.

Manchester Society of Architects. Annual Dinner. The Manchester Society of Architects held their annual dinner on 24 March at the Masonic Temple, Manchester. Mr. G. B. Howcroft, M.C. [*F*], President, was in the Chair.

After the Loyal Toast Mr. Howcroft proposed the toast of the R.I.B.A. Mr. Howard Robertson, M.C., A.R.A., S.A.D.G., President R.I.B.A., who was among the guests, responded. He said he thought that modern buildings were becoming a little too stereotyped, and what the architects of the world had to try to express in brick and stone was not the machine age but the yearnings and aspirations of humanity. The toast of 'The City of Manchester' was then proposed by Mr. J. Price Nunn [*F*], Senior

Vice-President of the Manchester Society, and the Lord Mayor of Manchester, Alderman Abraham Moss, J.P., replied. The Lord Mayor spoke of the city's progressive building programme. Not only had 60,000 houses been erected in little over 25 years, but many lovely schools had been built. He hoped that the new assize courts which it was proposed to build on a site off Deansgate would be completed within five years, and said that then the blitzed centre of Manchester would attract other beautiful modern buildings to form a civic centre of which Manchester could be proud. Mr. H. M. Fairhurst [*A*] then proposed the toast of 'The Guests' and Mr. A. J. Moon, President of the Manchester Law Society, responded.

York and East Yorkshire Architectural Society. Annual Dinner and Dance. The annual dinner and dance of the York and East Yorkshire Architectural Society was held at the Royal Station Hotel, York, on Friday 2 April 1954, with the President of the Society, Mr. Allanson Hick [*F*] in the Chair.

The guests included the Lady Mayoress, the Sheriff of York, Councillor J. Shannon, and Mrs. Shannon, Mr. P. G. Fairhurst, Vice-President, R.I.B.A., and Mrs. Fairhurst, and Mr. C. D. Spragg, C.B.E., Secretary R.I.B.A.

After the Loyal Toast the Rev. Dr. J. S. Purvis, M.A., F.S.A., Director of the Borthwick Institute, proposed the toast of 'The R.I.B.A.' and Mr. P. G. Fairhurst replied. Mr. Fairhurst said that he believed the type of architecture we were to have in the future was just emerging. For the last 15 years architects had had to do what they were told, but there was now a slight sign of their being able to do what they liked. He thought that, owing to causes outside the control of the architect, the quality of workmanship in the country had declined, and it was this generation's duty to restore architectural quality.

Mr. Allanson Hick proposed a toast to the guests, and the Sheriff of York replied.

Membership Lists

ELECTION: 6 APRIL 1954

The following candidates for membership were elected on 6 April 1954.

AS HON. CORRESPONDING MEMBER (1)

Costa: Dr. Lucio, Rio de Janeiro, Brazil.

AS FELLOWS (5)

Buttrick: Wilfred Thomas, Dip.Arch. (Manchester) [*A* 1933], Scunthorpe.
Fairweather: Geoffrey Hubert [*A* 1939].
Hope: John Leonard [*A* 1935], Enugu, Eastern Nigeria.
Kerr: James Aubrey [*A* 1922], Sydney, Australia.

and the following Licentiate who has passed the qualifying examination:—

Ogilvie: Gordon Cecil Wentworth, Nairobi, Kenya.

AS ASSOCIATES (74)

Adamson: (Miss) Sally Carter, B.A. (Manchester), Hyde, Cheshire.
Adie: Donald Woodrow, Dip.Arch. (The Polytechnic).
Arend: Derek William, Dip.Arch. (The Polytechnic).
Bainbridge: Harold Percy Thomas, Dip.Arch. (Birm.), Birmingham.
Baynton: John Leslie, Dip.Arch. (Birm.), Leamington Spa.
Bentall: James Pendril, Dip.Arch. (Sheffield), Sheffield.
Bierre: Noel William, Dip.Arch. (Auck., N.Z.), Auckland, New Zealand.
Bloomberg: Arnold, Dipl.Arch. (Northern Polytechnic), Melbourne, Australia.
Boobyer: Eric Hunwick, Dip.Arch. (The Polytechnic).
Boon: John Neville, Dip.Arch. (Manchester), Manchester.
Bradshaw: Ronald, B.A. (Sheffield), Stratford-on-Avon.
Brawne: Michael, Cambridge, Mass., U.S.A.
Brown: Frank Hilton, Dip.Arch. (The Polytechnic).
Bullivant: (Mrs.) Patricia Pamela Brown.
Calder: Alexander, D.A. (Dundee), Dundee.
Campbell: Keith William, Dip.Arch. (Manchester), Hanley.
Carruthers: William Alan, Dip.Arch. (Dunelm), Blaydon-on-Tyne.
Cox: John David, B.A. (Arch.) (Sheffield), Sheffield.
Cox: Ronald Albert, Dip.Arch. (The Polytechnic), Leigh-on-Sea.
Craig: Douglas Alexander, D.A. (Dundee), Dundee.
Crombie: Francis Charles McIntosh, Dip.Arch. (Manchester), Manchester.
Crowfoot: Colin George, Dip.Arch. (The Polytechnic).
Davy: Charles Anthony Edward, Dip.Arch. (Sheffield), Sheffield.
Dobbie: Brian James, Dip.Arch. (The Polytechnic).
Douglass: Peter, Dip.Arch. (The Polytechnic), Woking.
Dunbar-Nasmith: James Duncan, B.A. (Cantab.), D.A. (Edin.), Rothes.
Durham: Clive Hugh Henry, Dipl.Arch. (Oxford), Oxford.
Farmer: Maurice, D.A. (Dundee), Fife.
Fernie: Raymond George, Dip.Arch. (Nottm.), Derby.
Fiske: Herbert Percy.
Fraser: Angus John, D.A. (Dundee), Gosport.
Gibson: Reginald Allen Esmond, Dip.Arch. (Auck., N.Z.), Auckland, New Zealand.
Greaves: Jack, Dip.Arch. (Sheffield), Sheffield.
Harding: Keith Christopher, Dip.Arch. (The Polytechnic), Hemel Hempstead.
Hargreaves: (Miss) Olga Margaret, B.A. (Arch.) (Manchester), Marple.
Hastings: Julian Frederick Granville, Dip.Arch. (The Polytechnic).
Hazzard: Frank, B.A. (Arch.) (Sheffield), Birmingham.
Hemming: Victor Noel, Dip.Arch. (Manchester), Sale.
Hewanicki: Adam.
Holmes: John, Dip.Arch. (Leics.), Hinckley.
Horsley: Cyril, B.A. (Manchester), Manchester.
Jefferson: John Bryan, Dip.Arch. (Sheffield), Sheffield.
Jopling: Victor Thomas, Salisbury, S. Rhodesia.
Kershaw: Gordon, B.A. (Sheffield), Huddersfield.
Lakin: Derek Peter, Dip.Arch. (Nottm.), West Bridgford.
Landels: James, D.A. (Edin.), Edinburgh.
Le Marquand: John Harold, Dipl.Arch. (Oxford), Trinity, Jersey, C.I.
Meecham: (Mrs.) Mary Rosalind Anne, B.A. (Arch.), Wilmslow.
Meecham: Philip Henry, B.A. (Arch.) (Manchester), Wilmslow.
Mill: Donald Norman, D.A. (Edin.), Edinburgh.
Nicholl: Edgar John, B.A. (Arch.) (Sheffield), Sheffield.
Nunan: Robert George Philip, El Obeid, Anglo-Egyptian Sudan.
Ollis: William John Bernard, A.A.Dipl.
Parker: Gerald, Huddersfield.
Pullen: Michael William, Dip.Arch. (The Polytechnic).
Radford: David Hubert Blantern, Dip.Arch. (Birm.), Birmingham.
Radley: Ronald Peter, Dip.Arch. (Manchester).
Redfern: Gordon Francis, Dip.Arch. (Birm.).
Rees: John Bowen, Melbourne, Australia.
Riley: Norman Reginald, Dip.Arch. (Sheffield), High Wycombe.
Rothery: Charles Stuart, Dip.Arch. (Cardiff), Bridgend.
Sammut: Marcel Ernest Leopold, Cairo, Egypt.
Shaw: Ian Bradley, B.Arch. (Auck., N.Z.), New Plymouth, New Zealand.
Skeath: Robert Allan, Dip.Arch. (Manchester), Macclesfield.
Smith: Donald James Armstrong, Dip.Arch. (The Polytechnic), Weybridge.
Smith: John Stanley Loughran, Dip.Arch. (Sheffield), Matlock.
Starczewski: Henryk.
Summerhayes: Geoffrey Edwin, Cottesloe, Western Australia.
Topham: Michael Henry, B.A. (Arch.) (Sheffield), Stoke-on-Trent.
Ward: Alan John, Dip.Arch. (Sheffield), Chelmsford.
Woodham: Kenneth Nelson, Dip.Arch. (The Polytechnic), Woodford Green.
Woodhouse: Derek Alfred, Dip.Arch. (Sheffield), Newcastle, Staffs.
Worthington: Cyril Beesley, Dip.Arch. (Manchester), Bristol.
Yandle: Hubert John, Dip.Arch. (Nottm.), Martock.

Obituaries

Richard Greaves Brocklehurst, F.R.I.C.S. [*F*], Past President of the Berks, Bucks and Oxon Architectural Association, died on the 14 March, aged 69.

Mr. Richard Greaves Brocklehurst was articled to Mr. A. J. Bent of Weymouth, afterwards joining the staff of the Poole Borough Surveyor, Mr. Samuel J. Newman; and later, until 1914, serving in the Borough Surveyor's office at Weymouth.

In 1914 he joined Kitchener's Army and was attached, with rank of Captain in the R.E., to the staff at G.H.Q. Abbeville.

After the war he began practice in Holborn in partnership with Mr. C. H. Perkins [*A*]. Besides city work the firm were responsible for much country estate work, including extensive repairs at Hurstmonceaux Castle, where reforming the bridge over the moat was an important project. On dissolution of the partnership in 1924, Mr. Brocklehurst assumed responsibility for part of the firm's practice, mainly in the country, opening an office in High Wycombe which became a centre for much subsequent work in the southern counties. Among the buildings he carried out were the Municipal Offices, High Wycombe, in consultation with Mr. C. Cowles Voysey. These won him the R.I.B.A. Bronze Medal for the Berks, Bucks and Oxfordshire region in the three-year period 1930–33. The Wycombe borough library and museum, and museum extension, were also his work.

In 1936 he formed a partnership with Mr. Colin Cooper [*A*] which continued, except for a wartime break, until his death, and carried out housing work for Wycombe Rural District Council, factory construction, school work, licensed and other business premises.

He was a very quick and facile draughtsman, particularly in pen and ink, and many public and private rooms in the Wycombe area are graced with his sketches and etchings of the

local scene, of Dorsetshire, to which county he was much attached, and souvenirs of continental visits.

He was a man of many varied interests. In his early days he was a well-known association footballer in Dorset, playing many times for the county; he maintained his interest in the game as honorary architect for Wycombe Football Club, for whom he prepared recently a scheme for re-forming the ground and enclosures. As a cricketer he played for many years for Wycombe Cricket Club and captained the first team for two years. Later he became a useful and enthusiastic golfer. He also always had a great interest in amateur dramatics. During the 1914–18 war he had the pleasure of playing in company with Miss Cicely Hamilton and Mr. Leslie Banks, who organised the entertainment of troops in France. In Wycombe for many years he took a leading part in the town operatic and dramatic society.

COLIN COOPER [*A*]

Douglas Niel Martin-Kaye [*F*] died on 26 March, aged 65.

Mr. Martin-Kaye, who was a former Architectural Association student, spent the greater part of his career as a teacher. He went to the School of Arts and Crafts, Southend-on-Sea, now the Municipal College, in 1922 to teach architecture, and when it was recognised by the Royal Institute in 1927 he became Head of the Department of Architecture. For some years the terms of Mr. Martin-Kaye's appointment precluded him from practising, but this rule was later waived and he carried out a certain amount of private practice. The White Hall, Westcliff-on-Sea, was among his works, and he also carried out domestic architecture in the Home Counties.

In 1943 he resigned his teaching post, owing to ill health and deafness. He was then for a time in partnership with Mr. C. Warren Neil [*F*], carrying out chiefly war damage work, but this partnership was dissolved in 1947.

Mr. Martin-Kaye was the author of a number of articles in the professional press.

In 1927 he helped to found the Southend-on-Sea and District Society of Architects, and became Hon. Secretary. He organised the formation of Chapters in Chelmsford, Colchester and West Essex, which were later embodied in the Essex Society of Architects. He was subsequently Chairman of the Southend-on-Sea and District Chapter of the Essex, Cambridge and Hertfordshire Society of Architects. He was a past member of the Board of Architectural Education, the Schools Committee, the Prizes and Scholarships Committee and the A.R.C.U.K. Board of Architectural Education.

Mr. S. E. T. Cusdin, O.B.E. [*A*] adds:

'Neil Martin-Kaye looked like a text-book professor. That far-away look, his rugged, massive and Bohemian appearance, his amiable, kind and tempestuous nature, fitted the part which he would have fulfilled so well.

'He will be remembered by many members of the Institute and particularly by the Board of Architectural Education as a determined and dogged champion of many lost causes. But the students who sat under him as Head of the Department of Architecture at the Southend-on-Sea Municipal School of Arts and Crafts will think of him more affectionately. He had a natural genius for teaching and poured out his energies in rapidly developing the minds of his students, encouraging the weak, ruthlessly criticising the more fortunate, and widening the view of them all.

'Like so many people with mercurial and individual temperaments, he found the dictates and restrictions of working within the narrow limits of an education committee too provoking.

'He later turned his energies to professional causes and it was through him that the Southend-on-Sea and District Chapter of the Essex, Cambridge and Hertfordshire Society of Architects was formed, to which later he was elected honorary member.

'He found consolation for some of his disappointments in music, writing and reading, and in the interests of his charming family.

'He will be remembered as a character in a profession not richly endowed with colourful personalities, and he bore no malice, and was the embodiment of that Christian virtue—hope.'

Frederick Charles Langrish-Toye [*A*], lecturer in architectural history for many years at the School of Architecture in the Regional College of Art, Manchester, and at the Blackpool Technical College, died on 19 February, aged 70.

Mr. Cecil Stewart [*F*], Acting Principal of the Regional College of Art, Manchester, writes of his late colleague: 'Frederick Langrish-Toye was a teacher of great distinction. Everyone who was a student under him—and there must have been thousands—will remember the brilliant blackboard sketches with which he illustrated his lectures. They exemplified not only his deep knowledge but also his constant love for his subject. He was always ready to help colleagues and students, and his help was well worth having.'

Charles Henry Simpson [*A*] died on 12 March after a short illness, aged only 37. His partner, Mr. E. B. Musman [*F*], writes:

'Charles Simpson received his training in the rudiments of architecture and the building trades at the Hammersmith Technical School, to which he obtained a scholarship and where he later acted as a part-time instructor.

'He came to me at the age of 16 and, except during the war years when he served in the Royal Engineers at home and in Kenya, was with me until his death. In 1951 he became a partner.

'His natural talent developed steadily through the years and his gift of administration was of a high order. Had he lived I fully believe he would have distinguished himself as an architect. Wherever his work took him he was liked and respected. He was a loyal partner and a good friend.'

John Rigby Poyser [*L*] died on 17 January, aged 82.

Mr. Poyser was articled to a Nottingham firm and set up his own practice about 1897. From 1916 to 1944 he was architect to Messrs. John Player & Sons, Nottingham. Among his works are the Dublin factory for that firm, the Nelson Free Library, Nelson, Lancs, the Nottingham children's hospital and nurses' home, the screen in Lenton Church, Nottingham, and a large number of private houses.

Harold Ascensus Wilkinson [*Retd. L*] died on 17 February, aged 69.

Mr. Wilkinson studied at the Northern Polytechnic (London) and served articles in the Borough Engineer and Surveyor's office, Folkestone. He then took a post as architectural assistant with Kent Education Committee, from 1906 until the outbreak of the first world war (in which he served with the Northumberland Fusiliers as a Second Lieutenant) and again until 1920. He was subsequently with the Metropolitan Asylums Board until 1930; from 1930 until 1948 with the London County Council; and from 1948 until his retirement in 1949 with the Metropolitan Regional Hospitals Board. Mr. Wilkinson's work was thus throughout his career concentrated in hospitals and schools.

Richard Strachan de Renzy Harman [*A*] died in Christchurch, New Zealand, on 14 September 1953, aged 56.

Mr. Harman, who was a native of New Zealand, served articles in Christchurch and then came to London to continue his studies. He became an Associate of the R.I.B.A. in 1925. He specialised in church architecture and was responsible for the chapels of St. Michael and St. George in Christchurch Cathedral, the reredos at the back of the high altar and numerous memorials in the cathedral. Mr. Harman also designed a number of churches in many parts of New Zealand, among them being the Church of the Good Shepherd, Lake Tekapo, the foundation stone of which was laid by H.R.H. The Duke of Gloucester. He also designed St. George's Hospital, Christchurch, where he died. The city's coat of arms was also his work.

Mr. Harman served overseas during the first world war with the 2nd Canterbury Battalion and in the second war he was in the National Military Reserve and was later a company commander in the 4th Battalion of the Canterbury Regiment.

Stanley Gage Livock [*F*] died on 2 February, aged 68.

Mr. Livock practised in his native Norwich and in London. He was for some time in partnership with Mr. Arthur W. Kenyon, C.B.E. [*F*], and with him carried out private domestic work and housing estates in Norwich and elsewhere, Weybridge Hospital and Norwich Fire Station (both the result of competitions). Also Mr. Livock was responsible for a hospital and addition to the Southern Railway orphanage, a Metropolitan Police section house, Twickenham police station, and some church restoration. He served on the Guildford Town Planning Advisory Committee and lectured at the Guildford Art School. He was a Freeman of the City of Norwich. His son, Mr. Alec Livock [*A*], now carries on the practice.

Mr. Arthur W. Kenyon writes of his late partner: 'We went into competitions together and I attribute any success which we had to his thoroughness and care of detail. He was by nature a craftsman and took infinite care in everything which he carried out; he was patient and could get from the most junior draughtsman exactly what he wanted. He had a great knowledge of materials and never allowed poor workmanship to enter into his work. His knowledge and love of gardening enabled him to give to his domestic work that setting which is so important, and his clients were always anxious to have his advice on this as well as on their most trivial requirements.

'We have lost in Stanley Livock an architect of sound judgment and infinite knowledge and an example to young people entering the profession.'

John Wilfred Wilson, A.M.T.P.I. [*F*], died on 3 February, aged 68.

Mr. Wilson's career began with appointments with the King's Norton and Sutton Coldfield local authorities from 1898 until 1908. He then turned to private practice at Sutton Coldfield, Southampton (with William Borough Hill, F.S.I.) and Cromer. During this period he carried out domestic work, shops, department stores and offices. In 1916 he became architect to the Austin Motor Co. and erected large-scale

production buildings and housing schemes. In 1921 he went to Shanghai, again in a private capacity, and was associated with much housing for the native population, large residences for wealthy clients, offices, printing works, the Universal Stores building of Tai Chong & Co. and a memorial temple to the Marquis Li Hung Chang.

He returned to England in 1927 and carried on private practice in Birmingham. During the war he served on the architects' panel of the Birmingham War Factories Joint Committee, War Damage and Ministry of Town and Country Planning, covering Warwick, Worcester, Stafford, Salop and Hereford. While still continuing his private practice after the war Mr. Wilson was appointed architect to the Dunlop Rubber Co. Ltd. and was responsible for the planning and development of the Company's post-war building programme at home and overseas, including projects in India, South Africa, New Zealand and Germany. At the end of 1952 he severed his connection with the company to devote his whole time again to private practice, in which he was busily engaged almost to the end. Mr. Stuart Bentley, A.M.T.P.I. [*F*], present architect to the Dunlop Rubber Co. Ltd., says of him: 'He lived for his work and died in the midst of it as he would have wished.'

Mr. Bentley further writes: 'Although his output of commercial and industrial work was also large, Mr. Wilson derived his greatest satisfaction from the more individual and intimate sphere of high class domestic architecture where his creative talents had full range. His skill in domestic planning and the clean lines and perfect proportions of his elevations made any house he designed as clearly recognisable as his work as if it had borne his signature. He leaves behind a great output of work which will continue to grace both his memory and the profession.

'In paying tribute to a personal friend and excellent colleague, I wish to say that John Wilson possessed a quiet and kindly personality and a wealth of knowledge in many subjects gained by wide experience. His repertoire of personal experiences, in China particularly, was most entertaining and worthy of recording had he had time to write a book, but his practice was so full that he was unable to devote time to more leisurely pursuits. His death will be felt by a wide circle of professional colleagues, business associates and friends by whom he was held in high esteem. He will be long remembered for his personal qualities, kindliness and deep understanding.'

Herbert Kelsall Armitage [*L*] died on 24 December 1953 at the age of 67.

In private practice Mr. Armitage built a number of churches for the Primitive Methodist Congress. He also worked for a time for the Ministry of Works.

Mr. Armitage served with the R.E. in both wars, attaining the rank of Major. He was at the relief of Archangel during the first world war and was awarded the Order of St. Stanislaus, Second Class.

Ernest Alfred Smith [*Retd. L*] died on 28 December 1953, aged 73.

Mr. Smith studied at Nottingham School of Art and University College and served his articles with the late Hedley Price, of Low Pavement, Nottingham. He spent his working life in the City Engineer's Department (formerly the City Architect's Department) of Nottingham Corporation, rising to be Senior Assistant Architect. In this capacity he was associated with the designing of the central market, Mapperley nurses' home, Aston Hall mental colony and Carrington and Bulwell open air swimming pools.

His son, Mr. K. M. Smith, says of him: 'He was not a man who cared for the limelight, but he loved his chosen profession and was concerned to preserve his integrity as an architect. Although he preferred the older architectural styles, he followed modern trends with much interest and hated shams and bad taste in buildings.

'He was an excellent draughtsman and although none of the buildings he designed bears his name we feel that they will be lasting memorials to his memory.'

Ernest William Turner [*L*] died on 6 November 1953, aged 74.

Mr. Turner served his articles with the City Engineer and Surveyor of Peterborough from 1895 to 1898, and then held municipal appointments at Peterborough, Huddersfield, Sheffield and Birmingham successively. The last named appointment was that of Superintendent of the Housing and Town Planning Department. From 1921 onwards Mr. Turner was in private practice in Birmingham, specialising in housing and town planning. His housing schemes carried out between 1921 and 1950 included one for the Borough of Wednesbury, for Bromyard U.D.C., for Birmingham Corporation, for Coombelands, Watford (with factory and communal buildings as an industrial colony), for Brierley Hill U.D.C., for the Borough of Halesowen and others. He also drew up a town planning scheme for the Borough of Halesowen, covering about 2,500 acres in the north and east wards, and for High Wycombe, Huddersfield and the City of York. The nurses' home, Birmingham eye hospital, was also his work.

Frederick William Hobill Lee [*Retd. F*] died on 24 January, aged 79.

Mr. Lee studied at the Birmingham School of Art and served his articles with Messrs. Cousins, Birmingham. He started in private practice in Leamington Spa in 1902 and continued there until his retirement in 1947. He was in partnership with Mr. Harry Quick from 1902 until 1935, and with Mr. Guy Silk [*F*], who now carries on the practice, from 1937.

Among Mr. Lee's architectural works were the Wesleyan Sunday Schools in Dale Street, Leamington, the reconstruction of Barclay's, Lloyds' and the National Provincial banks in that town, clock towers at Leamington and Kenilworth, the City Arms public house at Earlsdon, Coventry, and a number of private houses. In the first world war he was connected with the building of the National Loading Factories at Coventry, and then served in the R.A.F. as a draughtsman.

Mr. Lee had a long record of service in the field of local government, first on Warwick R.D.C., then for 13 years on Leamington Town Council. He was for a long time chairman of the Housing Committee of the Leamington Council and of the Midland Joint Town Planning Advisory Council. He also served as honorary architect to the Leamington Slum Clearance Society. He was a J.P. from 1934 until 1950. Another interest was Freemasonry; Mr. Lee was a member of Guy's Lodge.

Arthur Clifford Day [*L*] died on 1 February, aged 57.

Mr. Day was an architectural assistant with the Office of Works from 1919 to 1929, and Assistant Architect to the Metropolitan Water Board since 1929.

Charles John Goodwin [*L*] died on 4 February, aged 73.

Mr. Goodwin served his articles with Mr. R. A. Crowley [*A*], London, and was from 1903 to 1920 assistant to Mr. Ernest Bates [*F*], whose death occurred on 14 November last.

From 1920 to 1948 Mr. Goodwin was with the Office Ministry of Works.

Herbert William Matthews [*Retd. F*] died on 4 March, aged 79.

Mr. Matthews served his articles with Mr. Charles S. Adye, county architect for Wiltshire, and practised in Bath and its environs. He planned renovations to the Grand Pump Room Hotel, Bath, became architect to the Lady Honeywood group of hotels and was responsible for Denewood Grange, Bath, and the Little George Hotel and the infectious diseases hospital, both at Chippenham.

Mr. Matthews was also very much interested in the stage and in aviation. He organised the Bath pageant some years after the turn of the century and as a result of its spectacular success was engaged to run the Festival of the Empire at the Crystal Palace in 1911. He was one of the founder members of the Bath Operatic and Dramatic Society. As a pioneer in flying he joined with Graham White, and the company constructed planes at Hendon Aerodrome. He also organised one of the earliest air circuses, again at Bath.

Members' Column

This column is reserved for notices of changes of address, partnership and partnerships vacant or wanted, practices for sale or wanted, office accommodation, and personal notices other than of posts wanted as salaried assistants for which the Institute's Employment Register is maintained.

APPOINTMENTS

Mr. Lionel Baff, A.R.I.C.S. [*A*], has been appointed senior lecturer in Architecture and Building at the Technical College, Bradford, where he will be pleased to receive trade catalogues, etc.

Mr. H. M. Cunningham [*A*] has been appointed resident architect to Messrs. Hopson Hill and Partners, 2 Leyton Green, Harpenden, Herts.

Mr. Alexander Fraser, A.M.T.P.I. [*A*], has been appointed Architect and Town Planning Officer to the Municipal Board, Mombasa, Kenya, and will take up his appointment at the end of May.

Mr. W. E. Graham [*A*] has been appointed City Planner and Building Director of Saskatoon, Saskatchewan, Canada, and will be pleased to receive trade catalogues, etc., at the City Hall, Saskatoon.

Mr. Alan C. Kirkman [*A*] has been appointed architect in charge of the Benghazi office of Messrs. Mortimer, Firkin and Degiorgio, P.O. Box 234, Benghazi, Libya. He will be pleased to receive trade catalogues at that address.

PRACTICES AND PARTNERSHIPS

Mr. C. Cowles-Voysey [*F*] has retired from practice. He is transferring his practice to **Mr. John Brandon-Jones** [*A*], **Mr. Robert Ashton** [*A*] and **Mr. John Broadbent** [*A*] with whom he has been associated in the past. They will practise under the name of **Brandon-Jones, Ashton and Broadbent** from 2 Redington Road, Hampstead, N.W.4 (HAMpstead 4297).

Mr. George Fairweather [*F*] has taken into partnership **Mr. Eric Rheinberg** [*A*] and **Mr.**

Geoffrey L. Cannon [*A*]. The firm will in future practise under the style of **George Fairweather and Partners,** 28/30 Wigmore Street, London, W.1 (WELbeck 5489/0).

Messrs. Edward Forshaw and Greaves of The Old White Hart, Trinity Street, Hanley, Stoke-on-Trent, and Messrs. Massey and Greaves of 17 Museum Street, Warrington, and 186 Oxford Road, Manchester, 13, whose principals are **Mr. E. F. Massey** [*A*] and **Mr. G. L. Greaves** [*A*] have, from 1 April 1954, taken into partnership **Mr. Charles W. Tompkinson** [*A*]. The firm will henceforth practise at the same addresses but under the new title of **Forshaw, Massey and Greaves.**

Mr. A. E. O. Geens [*F*] has taken into partnership **Mr. Max G. Cross** [*F*]. The firm will in future practise under the style of **A. E. O. Geens and M. G. Cross** of Regent Chambers, 15 West-over Road, Bournemouth (B'mouth 5201).

Mr. L. R. Gower [*F*], formerly County Architect of Glamorgan, retired from public service on 31 March 1954, but is continuing in private practice from his residence at 1 Dorchester Avenue, Penylan, Cardiff (Cardiff 44280), until he obtains office accommodation.

Messrs. Graham and Roy [*L/A*], 6 Paternoster Row, Carlisle, have opened an office at 52 Main Street, Cockermouth (Cockermouth 2266) under the direction of the senior partner. They will be pleased to receive trade catalogues at their Cockermouth office.

Mr. J. Hewitt Mitchell [*A*] has opened an office at 1591 London Road, London, S.W.16, and will be pleased to receive trade catalogues, etc.

Mr. Herbert Morel [*A*] has begun practice at 3 The Green, Sidcup, Kent (Footscray 5847), where he will be pleased to receive trade catalogues, etc.

Mr. John Nelson [*A*] and **Mr. Cyril Garton** [*L*] have dissolved partnership by mutual consent. **Mr. John Nelson** will continue to practise under his own name at 25 Fenwick Street, Liverpool, 2 (Central 1355), and **Mr. Cyril Garton** will practise under the style of **Garton and Company,** at Sheffield Buildings, 89 Victoria Street, Liverpool, 2 (Central 3125), and at Kuching, Borneo.

Mr. T. McEwan Porter [*A*] and **Mr. Peter Wakefield** [*A*], associates of the late Mr. G. Blair Imrie [*F*], of Teffont Magna, Salisbury, have formed a partnership to continue his practice and that of Messrs. B. Wakefield and Son of 18 Orchard Street, Bristol, 1. They will continue to practise from the same addresses pending the establishment of a combined office.

Mr. Gerald Sanville [*F*] and **Mr. S. Kearsley-Wooller** [*A*], who entered into partnership on 1 October 1951 under the existing title of Oakley and Sanville, have now restyled the partnership **Oakley, Sanville and Wooller.** They will continue to practise from 60 King Street, Manchester, 2.

Mr. K. A. Saunders [*L*] and Mr. D. P. Jones have left the partnership of Messrs. Hammond and Jack. **Miss L. E. Jack** [*L*] will continue the practice on her own account from 130–131 Salisbury House, Finsbury Circus, E.C.2, still under the name of **Hammond and Jack.**

Mr. John S. Seabright [*A*] has resigned his appointment with the Malvern Urban District Council and returned to private practice with his head office at 58 Barbourne Road, Worcester (Worcester 2924), and will be pleased to receive trade catalogues, etc.

Mr. James McKay Spence [*A*] is now in practice at 8 The Green, Richmond, Surrey (RIChmond 4407), where he will be pleased to receive trade catalogues, etc.

Mr. Harald Weinreich [*A*] has taken into partnership **Mr. W. A. E. Sewell** [*A*], and the firm will in future be known as **Harald Weinreich and Partners,** and will continue to practise at 180 Piccadilly, London, W.1 (HYDe Park 4404).

Messrs. Douglas White and Furniss [*AA*] of 12 The Approach, London Bridge Station, London, S.E.1, have opened an office at 5 Stanford Place, South Road, Haywards Heath (Haywards Heath 194).

Mrs. Vera Whitton (*née* Lister) [*A*] has begun practice in Aden, P.O. Box 1238, and will be pleased to receive trade catalogues, etc.

Messrs. Wylie, Shanks and Wylie [*FFF*], of 12 Clairmont Gardens, Glasgow, C.3, have taken into partnership two members of their staff, **Mr. William Jardine** [*A*] and **Mr. Peter L. A. Williams** [*A*]. The style of the firm remains unchanged.

CHANGES OF ADDRESS

Mr. W. Ashley Bartlam [*A*] has removed his practice from 106 High Street, Elgin, to 41 Moss Street, Elgin, to which address all correspondence should now be sent.

Messrs. Cruickshank and Seward [*F*] have removed their offices to Royal London House, 196 Deansgate, Manchester, 3 (Deansgate 6161).

The new address of **Mr. L. J. Dunn** [*L*] is Gable Ends, King's Drive, Eastbourne, Sussex (Eastbourne 7490).

Mr. Barry W. East [*A*] has changed his home address to 2 Great Warley Street, Great Warley, Brentwood, Essex.

The new address of **Mr. Geoffrey J. Foxley** [*A*] is 23 Woodthorne Avenue, Shelton Lock, Nr. Derby, Derbyshire.

Mr. Basil Gillinson [*A*] has removed to Carlton Chambers, Albion Street, Leeds, 1.

Mr. J. Granger-Taylor [*A*] has removed to 22 Park Village East, London, N.W.1.

Mr. J. H. Ingham [*A*] has removed to 13 The Drive, Tonbridge, Kent (Tonbridge 2984).

The temporary address of **Mr. Donald W. Insall** [*A*], practising at 'Beaumont', Northumbria Drive, Henleaze, Bristol, is now c/o Mr. John H. Harvey, F.S.A., Winchester College, Hants.

The new address of **Mr. H. R. Stewart-Hunter** [*A*] is 34 Hove Park Way, Hove, 4, Sussex.

Mr. John Vigour [*A*] has removed to Cecil Chambers, Umtali, S. Rhodesia.

PRACTICES AND PARTNERSHIPS WANTED AND AVAILABLE

Associate, aged 39, wishes to take over practice from retiring member, or to enter into partnership in an established practice in Sheffield or near. Some capital available. Box 33, c/o Secretary, R.I.B.A.

Old-established architectural and surveying practice in the West Riding of Yorkshire for sale. Box 34, c/o Secretary, R.I.B.A.

Associate with wide experience seeks partnership or position leading thereto in southern or western England. Some capital available. Box 35, c/o Secretary, R.I.B.A.

Fellow desires to purchase practice or partnership in York, Malton, Doncaster, Leeds, Wakefield, Beverley or Hull. General practice preferred. Box 36, c/o Secretary, R.I.B.A.

Experienced Associate, aged 32, wishes to purchase a partnership in London or Home Counties. Box 37, c/o Secretary, R.I.B.A.

Associate, 33, seeks junior partnership, or position leading thereto in south or south-west. Considerable experience in handling large or small contracts in an executive position, specialising in hospital, laboratory and atomic work. Limited capital available. Box 39, c/o Secretary, R.I.B.A.

Fellow, age 39, wishes to purchase substantial practice in London. Ample capital available. Box 40, c/o Secretary, R.I.B.A.

Associate, 33, with wide practical post-war experience, seeks partnership (or appointment leading thereto) in south-west or home counties. Some capital available. Box 41, c/o Secretary, R.I.B.A.

Associate, 41, seeks partnership, preferably in northern England or midlands. Wide and varied experience of private practice, including domestic, educational and industrial work. Car owner. Capital available. Box 42, c/o Secretary, R.I.B.A.

Very old-established practice in north-west midlands has vacancy for partner. Must be Associate R.I.B.A. and prepared to purchase a part share. Box 43, c/o Secretary, R.I.B.A.

A junior partnership or position leading thereto is offered in an established firm with a good general practice in the west country. Box 44, c/o Secretary, R.I.B.A.

Associate, under 30, seeks junior partnership or position leading thereto, in London office. Capital available. Box 45, c/o Secretary, R.I.B.A.

WANTED AND FOR SALE

Wanted. Two-drawer foolscap steel filing cabinet. Box 32, c/o Secretary, R.I.B.A.

For sale. Buckram bound volumes of the R.I.B.A. JOURNAL, 1947 to 1953. Box 38, c/o Secretary, R.I.B.A.

For sale. Halden's mercury vapour plan copying machine and developer. As new. Owner changing to larger machine. Box 46, c/o Secretary, R.I.B.A.

CORRECTION

In the notice concerning the change of address of **Mr. Leslie H. Kemp** [*F*] in the February issue of the JOURNAL, his class of membership was incorrectly shown as Associate. Mr. Kemp was elected a Fellow in 1946.

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